A

SCIENTIFIC AND POPULAR

VIEW

OF THE

FEVER OF WALCHEREN,

AND ITS CONSEQUENCES,

AS THEY APPEARED IN THE

BRITISH TROOPS RETURNED FROM THE LATE EXPEDITION;

WITH

AN ACCOUNT

OF THE

MORBID ANATOMY OF THE BODY,

AND THE EFFICACY OF

DRASTIC PURGES AND MERCURY

IN THE TREATMENT OF THIS DISEASE.

By J. B. DAVIS, M. D.

One of the Physicians appointed by the Medical Board to attend the sick troops returned to England.

LONDON:

PRINTED FOR SAMUEL TIPPER,
LEADENHALL STREET.

1810.

W. Flint, Printer, Old Bailey.

R33963

INTRODUCTION.

THE annals of the British empire contain not a more important foreign expedition, than that of the last summer, whether we consider it with respect to its magnitude, or to the objects which it had in view, together with their probable effects, not only on the national, but on the general welfare. That it succeeded but in part, has been a source of regret from the throne to the cottage; it is not for me however to decide upon, or even to examine into the *political* or *professional* causes of this disappointment—these are beyond the limits of medical investigation, though they may be occasionally hinted at without impropriety in the following memoir. The fact has been sufficiently ascertained, that the prevalence of disease, after a certain period, had acted most powerfully to retard and even to prevent further operations, and to render it necessary that all the surviving sick and convalescent should be brought home and distributed in military hospitals in the most eligible situations, where a number of medical men of the various classes were employed by government, to render to the sufferers that aid and attention which they could not possibly receive in an enemy's country.

I shall for the present observe, that my experience of the Walcheren fever commenced with the arrival of the sick in England, and that I can only advance on my own authority such facts as I was witness to; it is not for my purpose therefore to enter largely into

 the

the phenomena of the disease whilst the troops were in Walcheren, nor to obtrude on the public a diffuse narrative of events, with which they are sufficiently acquainted; yet it is not the less necessary, both for the information of *future* readers, and for the elucidation of many parts of the following sheets, that I should enter into a slight detail of the *medical part* of the expedition, and take at the same time, *en passant*, a sketch of the *medical topography* of that territory, whose very atmosphere seems to have been loaded with the seeds of death and desolation. If we compare the situation of the island of Walcheren, and indeed of the whole of the province of Zealand, with the marshy districts of our own country, we are led by a simple analogy, to expect that the prevalent disorders of each will bear a strong similarity. The whole of the Dutch states, and that part of Flanders bordering on the sea, are low and wet, and subject to marsh distempers; but Sir John Pringle observes of Zealand in particular, that its air is worse than in any other part, not only from its relative situation being low and damp, but from its being surrounded by the mouths of the Scheldt, whose oozy beaches unite with the marshy lands, so that with the exception of the sea-breeze from the westward, every gale, nay every breeze, comes fraught with pestilential vapours, adding their baneful influence to that of its own native moisture, and unwholesome exhalations.

The *general* causes which produce the unhealthiness of Zealand, are the same with those of the surrounding country; for the whole of these districts being below the level of the sea, they would be little better than a morass, were it not for the drains which tend to carry off a portion of the *superior* superabundant moisture, and for the dykes which prevent the encroachments of the ocean, though they do not always, nor in all parts, operate to its total exclusion. These temporary additions to the *superior* moisture are never completely carried off by the drains,

drains; of course, a considerable evaporation must ensue, which added to that of the numerous canals and ditches, fills the atmosphere with watery vapours, and to all this is often joined in the summer and autumn, the effluvia proceed from the putrifying decomposition of animals and vegetables, not only in the canals, but in various other situations.

To this great quantity of moisture on the surface, must be added a source equally productive, though less obvious, which is much insisted on by the above quoted authority,* this he describes as consisting of water under ground, yet lying so near the surface, that not a dry ditch is any where to be seen. This *inferior* moisture is soon brought into action, for as the soil is light, it easily evaporates, and thus readily mixes with the atmosphere in summer, even where no water is to be found on the surface. It is stated as the result of repeated observations, that the inhabitants in the different parts are more or less subject to marsh disorders, in proportion to the distance of this inferior watery stratum from the surface; and that by looking into the wells, a person may form a pretty accurate judgment of the state of health in each district:† "for these wells being fed by the subterraneous water, with which they are always on a level, and sinking in proportion to the droughts of summer, are a proof of the constant exhalation of this concealed moisture, through the pores of the earth, by the heat of the sun." A quotation which may be considered as applying particularly to the state of the atmosphere during the late expedition, for it appears from the evidence on the inquiry, that the troops were so abundantly supplied with water, as to render it unnecessary at any one period, for them to use that which was sent from England.

Much of the tendency to disease in Zealand and

* Sir John Pringle.

† But moisture is only a concurring cause of marsh disorders. It has not the power of producing them unless combined with marsh effluvia.

in

in Walcheren seems to depend on local causes on its sea-line; for it has been confidently asserted by several writers, that there is a peculiar species of damp exhalation, which rises from the slime and mud laying on the beach, during the recess of the tide, and which has been thought more liable to produce bad effects, (for moisture always debilitates the body and disposes it to disease,) from some chemical causes supervening from the mixture of the drainings of the land with the salts deposited on it, and perhaps with a portion of that putrescent phosphoric matter, which is known at times to be copiously distributed over the surface of the ocean. The accuracy of this reasoning I shall not take upon me however to advocate, yet in a general point of view it carries with it an air of probability, as on several other parts of the coast, where the beach is sand or gravel, and where there are no marshy grounds in the immediate vicinity, the people are in general healthy; thus affording a proof that Walcheren and Zealand must have some *particular* and specific causes of extraordinary unhealthiness, independent of the *general* ones already hinted at, and which are common to them, with the other parts of Holland and Flanders.

It has been stated by Sir John Pringle, that another cause of the humidity and unwholesome state of the atmosphere of these low tracts of country, arises from their imperfect ventilation; because there are no hills to confine the air, and to serve as funnels for its direction in various currents over these extensive plains. In consequence of this he considers the air as likely to stagnate, and this the more from its being artificially confined by the hedge-rows, orchards, and plantations of trees either for ornament or use. This reason may certainly operate to some extent, and may also serve in some degree to explain the extraordinary fact, hereafter noticed, that the troops in cantonments in South Beveland were affected with the fever, prior to its attack upon those exposed to the

the more full effects of the marshy atmosphere, and of the nocturnal dews during the operations before Flushing.

It is also a well established fact, in various parts of the world, that even a *a change of water,* although in both cases, it is *apparently* pure, is productive of violent effects on the body. In the West Indies, cruizing ships on the southern station, with their crews in apparent health, have been invariably seized with fluxes, when ordered on the northern or Tortola station, and vice versâ; a fact attributed to the change of water; nay in Tortola, where the inhabitants use tank water for domestic purposes, it is not an unusual thing for those who are tenacious of their health, when invited on board a man of war to dinner, *to carry their own water with them.* These and many other facts therefore make it extremely probable, that the Walcheren water was one of the concurring causes which disposed the body to the invasion of the late dreadful sickness. It is however, it may be remarked, in the production of diarrhœa, and *not* of fever that the effects of bad water are generally so remarkably conspicuous.

There is another and a very important observation of Sir John Pringle's respecting the atmosphere of these marshy countries, which was fully verified by late experience, as will appear in the course of this narrative. He considers a material difference as existing between moist and rainy seasons; for as he states, it is evident even to common observation, that in marshy or fenny districts, the greatest degree of moisture, even without any rain, may be occasioned during intense and continued warm weather, by the extraordinary exhalation which takes place, and is necessarily supported in the atmosphere. On the contrary in a rainy season, or when there are frequent showers, the rapid condensation promotes a motion in

* Page 54.—l. 21.

the

the air, and cools it, and also checks the rise of vapour; it may also by diluting the thick and corrupted stagnant water, alter its specific gravity so far, as to cause the precipitation of those dead animal and vegetable matters which produce baneful effluvia. These salubrious consequences however will happe more readily during the hot season than if the rains fell early in the summer, for then the superabundant water which resists absorption, will remain to stagnate and eventually to add to the marsh exhalations.

Of the periods in which these various changes take place, this author so often quoted says that "the epidemics of this country may therefore be generally dated from the end of July, or the beginning of August, under the canicular heats: their sensible decline, about the first falling of the leaf; and their end, when the frosts begin."

The island of Walcheren, then, which has become proverbially unwholesome from its stagnant waters, low situation, damp and foggy atmosphere, could not fail to undermine the health of the troops in the late expedition, enervate their constitutions, and with various concurring circumstances, predispose them to remitting and intermitting fevers, the hereditary patrimony of the natives, diseases which attack at all times, but appear and prevail at certain periods with particular force and activity. The climate of this island, like that of every insular situation where cold and moisture are combined, is extremely hurtful to the human body, and especially to those unaccustomed to their influence, and exposed under peculiar circumstances to their debilitating operation.

In the cold and moist atmosphere of Walcheren, even the children have a delicate organization, a laxity of fibre, and a languid circulation. They are born large, but do not grow up rapidly, nor yet acquire the firmness common to children in healthier spots. They are very subject to glandular swellings, dropsies and

and obstructions of the viscera. Dentition is a long and tedious, but not a painful process. The teeth are slow in becoming solid, and easily run into decay as the child approaches maturity. The general constitution of the adult is that to which ancient physicians have given the name of phlegmatic. The organization in short is feeble, the complexion sallow, the body bloated and frequently anasarcous, and all the grand functions of life are weakly and incompletely performed. The women like the men have a natural weakness of constitution, and become old at an early period of life. To the various morbid causes, arising from unhealthiness of situation, conspiring to exert their baneful influence on the body of these islanders and to deprive it of vigour, may be added a poor watery diet, which in no slight degree contributes to heighten and confirm the ill effects of climate. The existence of the inhabitants of Walcheren may be regarded as a constant disease. If we were to cast our eyes over the habitable part of the globe, we should scarcely be able to fix them on a people whose customs and mode of living are more likely to aggravate the accidents arising from a cold and moist temperature than those of the natives of Walcheren.

It is no wonder, then, that the British troops in such a climate as this, should soon have their ranks reduced by disease in an alarming manner. Numbers of young men unaccustomed to fatigue, and the hardships of a military campaign, exposed to the destructive influence of a damp cold atmosphere, and marsh exhalations, would, in spite of the powerful mental barrier, which fortitude, patient endurance, a love of glory, and zeal for the honour and welfare of their country, inspired against the invasion of disease, gradually have their health decline, and their physical powers sink under the insidious and imperceptible operation of these unsuspected and secret enemies. When by these means the constitution had once acquired

quired a morbid bias, and that condition of the animal economy which implies an agreeable performance of the great functions of life, strength and vigour of the muscular, activity and energy of the nervous system, at which the standard of health may be placed, was not preserved, then only the exciting cause of fever was required to act, in order for an effectual incursion to be made on the remaining strength which such individuals possessed.

Fevers of every description in the army claim, from the mortality they occasion, the particular attention and vigilance of every medical officer. They are inseparably connected in some situations with a soldier's mode of life, and produce greater ravages than all the hardships and other casualties of a campaign. It is at the commencement of a disease, upon the first visible declining health of the men that the utmost diligence is required to detect the source of the disorder, and to ascertain the probable destructive agency of surrounding powers on the animal economy, arising from soil and climate, as well as of those which may be attributed to exposure, excesses, diet, or considered as self-originating in the constitution. I admit that it frequently happens the assistance which medical men can afford is after all, often extremely precarious, either from the continued exposure of the troops to the exciting causes of disease, or from its sudden invasion and rapid progress in constitutions already predisposed to favour its admission into and action upon it.

From the little insight which I have had into the character of the private soldier, I am convinced there is a thoughtlessness and indifference about their own health that may be followed by the most serious consequences when disease rages around them, and more especially when they themselves seem verging to a state which will encourage its invasion. I have no doubt that soldiers, with the exception of a few who skulk and evade their duty from the dishonourable pretext

pretext of inability from disease, would sooner droop and allow themselves to become alarmingly ill, nay, almost to be precipitated into the utmost danger, than make early application for medical relief. It is a fact that men in certain circumstances, and under the full influence of acute diseases, will even walk about, and treat their illness with indifference till a few hours before their death. I have seen this occur repeatedly, when pneumonia has been combined with the Walcheren intermittent, when the patient has been never free from the influence of febrile paroxysms, and when, in short, all the complicated consequences of the Walcheren fever have been present and hourly threatened to conduct him to his grave. I should then, seeing the necessity there is for the utmost vigilance, when an army is placed in such climates and situations as are unfavourable to health, watch the soldier's declining health, and be upon my guard against the approach of fever. An avenue is always open to its invasion where debility exists. Indeed, I think, debility may be regarded as a primary symptom of all remitting and intermitting fevers. And it seems there is scarcely any morbid condition of the living system more under the controul of the physician, in its early stages, than debility, provided all the necessary collateral aid can be obtained by diet, wine, and suitable cloathing, and without which he will only make a prodigal and unprofitable use of medicine, and have the mortification to find all his prophylactic means ultimately ineffectual.

It is well known to those acquainted with military affairs, and with foreign expeditions, that it is totally impossible for any foresight or anterior regulations to prevent the various circumstances which contain in *themselves* the embryo of future disease, from exerting their influence on the body, or even to guard against them effectually, if anticipated. This observation applies more particularly to a secret expedition, as appears from the *medical evidence* before the house of

commons;

commons; and indeed, without entering into the merits of the inquiry, we may confess that this extreme foresight and anticipating care, *even if practicable*, were not so absolutely necessary, where the distance from home was so short, as to allow an immediate remedy to be applied to such cases as might occur. If these remedies, however, were not applied to the extent necessary, it is evident from the opinions of the various witnesses, that the deficiencies were owing to a variety of causes, some of which neither exertion, perseverance, nor money, could *at first* controul. Under this view of the subject, therefore, it is unnecessary to go into a detail of the medical arrangements previous to the sailing of the great body of the expedition, which took place about the 28th of July, 1809; the troops amounting to near forty thousand of all descriptions arrived at their destination, or rather at that anchorage which the unsettled state of the weather obliged them to take, on the 29th and 30th of the same month. The landing immediately took place; Middleburg and the whole of Walcheren surrendered, with the exception of Flushing, which was invested, and the attacks advanced on the various points with all the usual promptitude of our troops, and a co-operating naval force.

The division of the army immediately occupied before Flushing consisted of 17,000 men; the remainder of the troops were cantoned in Beveland, or still remained embarked in the men of war and transports, before Cadsand, &c. The defence of Flushing being protracted by the French governor, the approaches were also further delayed about the 7th of August by heavy rains, which unavoidably interrupted the carrying on the works, and perhaps assisted both in the local and constitutional causes of the subsequent disease, although no immediate effects were perceived.

So early as the 10th of August, the usual consequences of warfare, both with respect to sick and wounded, were in some measure anticipated at Harwich, where in consequence of an order to prepare the extensive

barracks

barracks for their reception, the regiments in garrison were marched off to other districts; and the same regulations took place immediately on other parts of the coast.

On the 15th Flushing surrendered, and it is a fact worthy of notice, that with the exception of the *killed,* the troops had not as yet buried a single man, nor was there any apparent tendency to disease, although the inundations, in consequence of the garrison breaking down the sluices, had spread to a considerable extent. At this period the medical department had taken several necessary steps on the presumption of the possibility of fever and dysentery, yet so little apprehension was felt on the part of the public at large, that a popular newspaper of the 23d of August laughed at the idea of unhealthiness, observing that the notion of the unhealthiness of Walcheren being so great, that it ought not to be garrisoned by British troops, was too absurd to deserve much notice; as it might probably be as unhealthy as Romney marsh, or the hundreds of Essex, &c.

A different impression however was felt in Walcheren, for as early as the 25th, it appears by a letter from the expedition, that the interruption to active operations which had then taken place, from the rapidity with which the disease was spreading, had excited much regret. Many of those who were on the spot hoped that if the troops could be transferred to active service, the additional energy thus given to the mind, might operate happily on the body; and this they did the more readily from attributing the disorder principally to immediately exciting and local causes, the baneful influence of which might be thus averted, or at least suspended for a time, and in short, so much modified as to produce an infinitely milder disease. These causes were then stated to be, the offensive stench which proceeded from the half smothered flames on entering the town; from the inundation laying half of Walcheren under water, and which were even widely spread through the British lines; and last-

ly

ly, from many of the French being buried in heaps, for the purpose of concealment, and at the same time, with but a very superficial covering of sand. It is, however, proper to remark, that all these causes were merely concurring, and did but dispose the body to that morbid bias which favoured the invasion of this disease, and contributed afterwards to make it more violent. The disorder had at first been confined to the privates, but about the 25th, it appears from a letter, that the influence of the climate began then to be felt by both officers and men; and the complaint was then considered as an "endemic intermittent, which though seldom fatal, was always tedious."

Before the 29th of August, the disease had spread so rapidly, that the commander in chief in his public dispatches, acknowledged that all his force then capable of being brought into the field, and that too decreasing daily, was 23,000 infantry and 2000 cavalry; and that the number of sick at that period amounted to little less than 3000 men.

The want of accommodations for this extraordinary number of sick was severely felt; every means however that could be used were put in practice to promote the comfort of the hospitals. Where an army proceeds on service, part of which is expected to be performed by *coup de main*, it is never customary to encumber them with heavy baggage, nor in fact with much more than the soldier can carry; of course his great coat and blanket formed the whole of his bedding. In this predicament general Picton was obliged to apply to the commissioner of the navy at Flushing, for beds for the use of his detached command, stating that he only possessed 200, whilst his sick amounted to 800. These, in part, were therefore immediately procured, but the rest of the sick were obliged to sleep on the floors, with their great coats on, and their knapsacks under their heads.

As every exertion had been used by the navy for conducting the transports with troops up the Scheldt in readiness for further operations, it became necessary

to

to order them down again, when the determination was entered into, of abandoning the ulterior objects of the expedition. Two divisions of these soon after arrived at Flushing, but from the various circumstances connected with the service, the troops on board had suffered many privations, and been thereby the more disposed to favor the invasion of the disease. These circumstances were, however, unavoidable from the nature of the service; the difficulty and the delays of the navigation of the river had rendered it necessary that as many troops should be put on board each transport as she could stow, leaving but little room for water or provisions, or other comforts; and as the change in the plan, obliged them to remain much longer on board than was at first expected, it is not surprizing that these transports should be almost literally converted into floating hospitals, and thereby tend considerably to increase the number of sick, and perhaps to augment the tendency to disease.

We are now come to a part of the subject, in which the leading facts ought to be known to all future practitioners, in order to put them more on their guard against the insidious progress of disorders, which like this, may not assume their most fatal character and tendency, until the number of sick is increased beyond all probability of calculation. This too is a part of the subject, and relating to a period of the history of the expedition, in which a true statement of the facts is so unconnected either with the crimination or defence of the objects of inquiry, that I cannot be suspected of party bias in going into the minutiæ of it.

In the letters which arrived in town about this time, it was *then* stated, that the ravage of the disease was daily aggravating, and in some quarters put on a most alarming appearance; nor was there a single regiment either on shore or embarked which had not suffered.

On the 30th of August, 200 of the artillery, 130 of the

the 36th, 300 of the 26th, 250 of the 71st, 200 of the 84th, and the whole of the 23d with the exception of about 40, were in the hospitals; and so rapid was the fever in its attacks, that in several instances during the last week in August, the regular guards have been relieved twice in the course of a day, in consequence of the men falling suddenly ill.

The state of the weather about this period, is highly deserving of notice; the heat is described as being extreme at one part of the day, whilst at another, they were annoyed with a cold damp, accompanied with violent rain. Indeed it is said, that from first landing in Walcheren, not a single day had passed without rain; a circumstance perhaps not very insalubrious, as we have before noticed in Sir John Pringle's remark on the same subject; these rains served also to increase the quantity of water necessary for culinary purposes, and for general cleanliness.

The deaths were now very frequent, so much so indeed, that the commanding officer with a very just consideration, issued an order, that no funeral should take place until after dusk; this seems in every point of view, a most judicious regulation, and was no doubt founded on the principle that depression of spirits must tend powerfully to promote the mortality of the disease, and therefore that the idea of death ought to be kept as remote from the sick as possible. Another idea on the same subject has been proposed by a military medical writer, no less deserving of attention in hospitals, or in the cantonments of the sick; it is as much as possible to separate the dying from those in the earlier stages of disorders, as the sight of an expiring comrade must have a depressing effect even upon the minds of those who undauntedly brave death in all its various shapes of tempest or of battle.

I have not sufficient materials to enter into the military distribution of the troops at this period, nor is it necessary in a work of this kind; it is worthy of remark,

mark, however, that about the beginning of September, Beveland was evacuated by the army; this was indeed part of the general plan for retiring and concentrating the forces, but its immediate cause was, that the troops there were particularly unhealthy, and although they had been in barns and other comfortable cantonments from their first landing, yet comparatively considered, there were more of them in the hospitals, than of that division of the army which had lain in the fields until the surrender of Flushing.

It is worthy of notice, how much these observations agree with the facts stated by Sir John Pringle in his 7th chapter; he tells us, that in 1747, the sickness was great amongst the British troops in Zealand; that these men, partly in camp, and partly in cantonments, in *South Beveland* and in Walcheren, were so much affected with the epidemic, that at its height, some of the battalions had but 100 men fit for duty, being less than one seventh part of their whole number. The "officers there were also sickly, though by more timely and greater care, their fevers were attended with less ardent and malignant symptoms than those among the common men." He also mentions another extraordinary fact, corroborated by later experience; it is, that the men of war which lay all that time at anchor in the channel between South Beveland and Walcheren, even during the worst period of the distemper, were not affected with either flux or fever, but enjoyed the most perfect health. This he supposes to have arisen either from the moist and bad air of the marshes having been dissipated or corrected before it could reach them; or from a situation open to a free current of air, being actually one of the best preservatives against the diseases of a neighbouring low and marshy district.

Early in September, there were upwards of 7000 in the different hospitals, in spite of the most active exertions on the part of the medical staff, assisted by the regulations of the commanding officers at the several stations

stations, for the *mechanical* preservation of health. It appears indeed that every means in their power were used at this period by the medical department, not only to stop the progress of the disease, but to investigate its causes; and here I gladly insert an extract of an official letter written by Mr. Webb, the inspector of hospitals, from Middleburg on the 1st of September, as it serves to elucidate and confirm some of the reasoning in the following memoir.

"The bottom of every canal that has communication with the sea, is thickly covered with an ooze, which when the tide is out, emits a most offensive and noisome effluvia; every ditch is filled with water which is loaded with animal and vegetable substances in a state of putrefaction; and the whole island is so flat, and so near the level of the sea, that a large proportion of it is little better than a swamp; and there is scarcely a place where water of a tolerably good quality can be procured. The health which the troops enjoyed during the active operations, was but a proof, that the powers of body and mind, when their energies are called into action, resist for a time the causes of disease.

"The fever which now unhappily prevails in the army, first appeared among the battalions which were cantoned in South Beveland, and only began to demonstrate its influence here, about the time that Flushing surrendered to his majesty's arms. The rapidity with which the disease has extended itself during the short period that has elapsed since that event, is almost unexampled in the history of any military operations. As the weather has been favourable (for hot and dry weather produces the most destructive diseases) the cases have been slight; but a very considerable number of them, notwithstanding, assumed a more serious form, and have degenerated into that species of low fever which often prevails in jails, and other ill-ventilated places in England."

At this period, steps had been taken to embark the worst

worst cases for this country, and about the 13th they began to arrive at Deal, where soon after the mortality in one hospital amounted to 14 in one day; the officers too suffered much: of the 68th regiment at one time 13 officers were ill; indeed the mortality among those who first arrived in England, was greater, comparatively, than at the same period even at Flushing, for there the whole daily mortality, though seldom less than 50, for some time previous to the 12th, had never on any one day exceeded 100. About the 14th of September, it was estimated, that of 15,000 men in Walcheren 10,000 were actually sick, the deaths then averaging at from 25 to 30 per day; of one regiment alone, the 38th, the sick return were 11 officers, and 459 men; and at the time of the command being left with Sir Eyre Coote, it appears from the lists of the garrison, that the sick in all the regiments were equal to one half, and in some instances were more.

The embarkation of troops still took place, but unhappily very little benefit was at first received by them on their arrival at home; a communication from Deal about that period, though indeed not an official one, states that the number that landed exceeded 2,000, of whom about 10 were buried daily, The impression made on the medical people there was, that the nature of the disorder had most unexpectedly taken a very serious turn, and had proved very fatal; that it was contagious, and that it produced those severe symptoms which shortly terminated in the death of the patient. This idea of *contagion* was, however, hastily and erroneously formed, as will appear in the succeeding pages.

Whilst the worst cases were sending to England, as fast as means would allow, the medical staff at Flushing were strictly attentive to every thing in their department: under the directions of Sir Eyre Coote, a medical hospital was established at Middleburg, both for officers and men, which was productive of much temporary benefit, from the exertions of

Dr. Faulkner, the superintending physician, whose active attendance throughout the whole progress of the disease, had met the public approbation of the then commander in chief; another was also established at Rammekins, where the sick went on remarkably well, under the superintendance of Dr. Irwine; to both of which gentlemen, though totally unknown to me, I am happy to pay this public tribute. Yet, with all the exertions of the heads of departments, much inconvenience was still felt from the inadequacy of accommodation for such a number of patients: it appears by Sir Eyre Coote's letter of the 17th of September, that in Middleburg, the sick were so crowded as to lay two in one bed, in several places, and to have no circulation of air, to which was added the total want of convalescent wards, whereby the greatest inconvenience was experienced. At Flushing too, the sick were exposed in many of the hospitals, to all the inclemency of the unwholesome atmosphere, owing to the damaged state of their roofs, which had been in a great measure destroyed during the bombardment. Artificers indeed, were sent from England to remedy this, but the work could go on but slowly, as they were of course as subject to disease as the troops, whose comforts they were sent to secure.

Even so late as the latter end of September, the convalescence at home was by no means flattering, and it appears from a report by Dr. Burrows, the deputy inspector of hospitals, that nearly 400 of the cases sent to England were deplorable ones; at Flushing too, the mortality at this period was considered as even greater in proportion than it had ever been in the West Indies. On the 23d of September, the sick report included 218 officers, 382 serjeants, 190 drummers, and 9046 privates; it is said that one week's return, at the latter end of September, gave 5 officers and 375 men dead; the sickness, however, must now have been evidently decreasing, for in the last week of September, the return on the 26th, was only 9798

in

in all—on the 27th the deaths were 48—on the 28th only 9, and then no new patient had been admitted for the last two days.

On the 30th, the report was only 8600 in the hospitals, fever abated, and sick diminished; however, Drs. Blane and M'Gregor still found themselves justified in reporting officially to Sir Eyre Coote, "that the insalubrious state of the air was such, that hardly any had recovered sufficiently to return to effective duty; and that great numbers who had attained to a state of convalescence, had relapsed."

From this period, until the final evacuation, any detail of circumstances is totally unnecessary, it would indeed be foreign to my purpose, I shall therefore proceed to my own observations, which commenced soon after this date.

The reader, no doubt of these pages, will naturally be inquisitive upon several points, and wish to be satisfied about them, before he will pay minute attention to, and place implicit confidence in the matter they contain. He will reason to himself thus: What opportunities has the writer had of obtaining the information he has laid before the public? Is he attached to the medical staff of the army? Has he been specially appointed to attend the sick returned from Walcheren? Was his practice extensive? &c. I shall immediately proceed to give him a short narrative upon this subject, and leave him to make his own conclusions to the several questions he has judiciously deemed it proper to propose.

Early in October, 1809, immediately after the arrival of the sick troops from Walcheren, I had the honor of being nominated by the physician-general, for the employment of temporary physician to the forces, on the then pressure of service, to attend the sick troops returned from Walcheren. I was ordered to repair to the eastern district, and to report myself to Dr. Shapter, inspector of hospitals at Colchester. There were three large depôts for the reception of the sick, besides some

some others of inferior note, in this district. The three principal general military hospitals were at Colchester, Ipswich, and Harwich. It was my lot to be stationed at the general military hospital at Ipswich. I remained two days at Colchester, with a view to await an order from the inspector of hospitals, specifying at which depôt my services would be the most acceptable, a delay that was unavoidable, owing to the returns from these several depôts not reaching the inspector till the morning following that of my arrival. In the interval, I visited the hospital at Colchester, where I found Drs. Fellowes, Hervey, and Roberts. With the latter gentleman I made the circuit of the wards, and examined into the state of the sick variously affected with the Walcheren fever. With the exception of those who were convalescents, the greater number of his patients were oppressed with visceral disease, and all the complicated consequences of the fever. I was informed by him, that the fever was variable in its type, that the paroxysms were unequally severe and long, the intervals one while distinct, and at another confused: in short, that it presented numerous anomalies, and extensive ravages on the viscera, of an organic kind, of the most perplexing and irremediable nature. Dr. Roberts also acquainted me with the successful issue attending the treatment of the fever and its consequences, in a protracted state, when combated with mercury; a piece of information for which I was much obliged, and that enabled me to place it with confidence by the side of those remedies which I proposed to employ when I entered upon my duty at Ipswich. I do not know the number of sick there was at Colchester, but I presume, from the extent of the hospital, that it was very considerable. I learned afterwards, I cannot say with what degree of truth, that this depôt did not contain the same proportion of bad cases as the hospitals of Harwich and Ipswich. Nevertheless, the cases which I had the opportunity of noticing, were deplorable

deplorable, and of such a nature, that I had very little expectation of their coming to a favorable termination.

I shall break in upon this narrative a few moments, for the purpose of observing, that many of these cases had a close resemblance to those I had some years back witnessed in the south of France, or rather the borders of Italy, in the remnants of a French army that had been encamped in Piedmont*, and attacked first with continued, and then remitting and intermitting fever. I have also observed similar appearances succeed the intermitting fever, with which the French troops have been seized at Aigues-mortes, in the neighbourhood of Montpellier. The vicinity of the former place is proverbial for its unwholesomeness, and gives rise to fevers, which, when protracted, produce extensive ravages on the viscera. But I had still a better opportunity of seeing the progress and ravages committed by remitting and intermitting fevers in Holland, in some Dutch and French troops that were assembled near Rotterdam. The cases I saw, were all protracted instances of the fever, but were evidently of the same kind as those which Sir John Pringle has handed down to us. Indeed, I have observed the fever of the country in various private individuals, but it did not appear under an equally formidable and extended shape as in the troops. Soldiers, from their habits of life, and strength of constitution, generally suffer more severely than others, when attacked with fever, or indeed acute diseases of any description.

But, to return to my narrative. On the arrival of Dr. Patrick, a deputy-inspector of hospitals, at Colchester, Dr. Shapter determined on my proceeding to Ipswich, a large depôt at which there were then but two physicians. I did not regret my delay at Col-

* In some part of this country, intermittent fevers are very prevalent.

chester,

chester, having thus had an opportunity of making my observations on the fever, and of obtaining a great deal of useful information respecting its nature and treatment. Arrived at Ipswich, I reported myself to Dr. Tice, physician to the forces, to whom was given the general medical superintendance and management of the sick troops at this depôt. By that gentleman I was nominated one of the physicians of the south general military hospital; Dr. Williams, of Ipswich, was the other. The date of my appointment being antecedent to that of Dr. Williams, I became senior physician of the south hospital: but the sick in it amounting then to about 150, were committed to our joint care, and became equally the objects of our solicitude and management. I must premise that there are two general military hospitals at Ipswich, besides a great many adjacent buildings and huts, capable of holding nearly as many men as the hospitals; so that the field for my observation extended far beyond that which was specifically allotted to me and Dr. Williams: nay, it embraced the whole depôt, which, upon the average, contained little short of 600 cases of the Walcheren Fever in all the various stages of its progress and complications.* It was my habit to visit the hospital to which I was appointed physician, night and morning, and to make the circuit of the other hospital, and the adjacent buildings, in turn, daily, in order that I might watch the progress, type, varieties, and terminations, of the Walcheren fever, upon a more extended scale, and by that means have it in my power to lay an ample account of it before the world. I thus became acquainted with the practice of my colleagues, Drs. Tice, Williams, Monteath, and of other medical officers, and was present at every dissection, with the exception of a few at my first arrival. Hence it will appear that I saw the effects of

* To the best of my recollection, the return averaged this number.

different

different remedies employed in different hands, traced the fever through all its stages and complicated forms, and then, after death, looked into the cavities of the head, chest, and abdomen, to note down the ravages it had committed on their respective viscera. I have written what has fallen under my own observation, and have not advanced that which I have not been an eye witness to. It would be an invidious task to advert to the practice of other physicians. I shall therefore content myself with detailing my own, with this observation, that some of my colleagues were fully satisfied of the efficacy of drastic purgatives in the advanced stage of the fever we had to combat in England; while all thought well of mercury in small doses, but disapproved of its indiscriminate and prodigal exhibition.

I have understood that the worst cases of the Walcheren fever sent into the eastern district, were concentrated at Harwich and Ipswich, a remark that I should have no hesitation in saying was a just one, were I to judge by the number of bad cases committed to my care, on my arrival at the latter place. I certainly had no right to expect that those patients who had the disease in its mildest form, would be selected for my treatment, and in this I was not disappointed. I found numbers dying, and numbers so much oppressed with visceral disease, dropsy, and dysentery, that not even the least hope could be entertained of their recovery.

At this time the deaths amounted from 12 to 16 weekly, a proportion they continued to bear during several successive weeks.

I must anticipate my subject here, and shall state in a few words, that the Walcheren fever seldom had a continued form in the sick at Ipswich. Even in the most obscure cases, remission could always be detected, but in general the intermissions were sufficiently well marked to appropriate the term of intermittent to the fever. The paroxysms and symptoms

toms attending the Walcheren fever, were mild one day, and severe the next; the longest interval taking place after the more violent fit. I considered then that the genuine paroxysm occurred on alternate days, and that the disease did not complete its period in a shorter space of time than forty-eight hours. It is true there was a paroxysm of fever every day, but it was one day mild, and another day violent, alternately, the more genuine attack occurring after the expiration of the forty-eight hours. Hence the denomination of double tertian type, a form of the fever more frequent than any other. Nevertheless, simple tertians, quotidians, and quartans, were all sometimes met with.

The medical staff at Ipswich consisted of three physicians, specially appointed for the service, three or four surgeons, several assistant-surgeons, and a suitable number of hospital mates. It gives me pleasure to observe, that each patient was provided with a separate bed, and comfortable bed-clothes, and that the attendance of every kind became, after a short lapse of time, entirely adequate to the emergency of the service I had embarked in.

If situation could have recovered the sick, they would soon have attained convalescence at Ipswich. The site of the hospitals in this place, is the best that can be imagined. Erected on two eminences, about a mile from the town, they command an extensive prospect of the circumjacent country, the simple scenery of which affords an interesting panorama of numerous rural beauties, intersected on the one side by a river that empties itself into the sea, bounded on the north and west by a chain of small hills, corresponding with those on which the hospitals are built, and skirted beneath by the town, over which the eye passes in contemplating this agreeable picture. But alas! not even the convalescents could enjoy the advantages which were thus given them, without having daily to weep over the grave of friendship, and to lament

lament the loss of their companions and associates in battle ! ! !

I shall dismiss this part of my subject, by saying, that in committing the following pages to the world, I have only acquitted myself of what I consider a public duty, an obligation I owe to my profession and the community. I have had opportunities of seeing the disease, and I only publish what I have learned from experience. I hope I have accomplished what I have undertaken. It is for other gentlemen who accompanied the expedition to Walcheren, to favour us with an account, philosophical and medical, of the fever as it appeared in that island. I have only taken up the pen where he would lay it down.

SCIENTIFIC

AND

POPULAR VIEW, &c.

SECTION I.

PRIMARY AND ILLUSTRATIVE OBSERVATIONS.

WHOEVER will take a retrospective survey of the annals of medicine, will be convinced, that in all ages, and in the armies of every country, remitting and intermitting fevers have produced a desolation little inferior to that of the sword. At no time, however, nor probably in the troops of any nation, has fever, with periodical intervals,* appeared under such formidable shapes, or such extended modifications, presented so great a variety of anomalous phenomena, or entailed upon the constitution consequences of a more irremediable or complicated nature, than those which have characterized the remitting and intermitting fever in the British troops sent to Walcheren. It is a painful recollection, that the mortality which has occurred amongst our countrymen, bears so large a proportion to the number of men employed on the expedition to the Scheldt, as the official documents represent, and more distressing still, when we reflect on the lamentable fact, that the sick, apparently fast attaining convalescence, daily relapse and

* The denomination I have given to the fever of Walcheren, is intermittent, which accords with the periodical intervals of that fever, as it appeared in the sick at Ipswich. When there is a complete apyrexy between the paroxysms, I understand it to be intermittent fever: when the apyrexies are indistinct and obscure, I consider it remittent: hence, this may become intermittent in its progress, when the interval is perceptible and free from pyrexia, which was the case at Ipswich.

fall victims to a disease, which silently and secretly superinduces a radical and anatomical change in some of the principal organs of life, a change so insidious and destructive in its progress, as to baffle and mislead the most judicious practitioners, and even to set at defiance the power of medicine.

It was rational to suppose, that the complexion and general features of the fever would be materially modified abroad, even by its long protraction, and that it would become so much changed after the removal of the sick to our own shores, as to assume almost a new character, and to offer a greater or less irregularity of type, as numerous accidental circumstances, and the perseverance of the disease, would incline it to put on. Observation has taught that this conjecture was well founded, for even in Walcheren, but more particularly in England, the progress of this fever was marked by great irregularity of type, and an imperfect termination of the paroxysms. In our own country, it was rather unusual to meet with a case of intermittent, that distinctly passed through all the stages common to this variety of fever, in the ordinary way: for innumerable variations in the type, time of attack, order of the disease, as well as in its complications, were constantly occurring, as I shall hereafter have occasion to detail.

It has been remarked by physicians, and I believe with much accuracy, that a shock given to the system, by breaking in upon the train of events always succeeding each other, in a more or less complex order, in fevers of every description, is, in many instances, capable of averting a return of the disease, or of diminishing its violence. Intercept a succession of the morbid phenomena, or destroy the association, and, it appears, by a law of the animal economy, which we do not understand, that actions always prone to vary and to grow languid or energetic, by the operation of some secret cause, will again become natural, and restore the healthy excitement of the system. Moreover, such is the intimate connexion and power exerted by one organ, or one set of organs over the whole body, that, to excite or controul this action, or oppose it, through the medium of one or several organs, as circumstances shall require, is a great desideratum, as well as the chief power the physician is capable of wielding in the treatment of disease. Here, by the bye, lies the skill of the practitioner, I mean, in controuling or exciting an action, or in subverting such action as is already established, prejudicial to the free performance of the functions, and consequently inconsistent with health.

Is it not by stopping the chain of morbid events taking place in the system, or by breaking the uniformity of unnatural actions in intermittent, that all our remedies exhibited

for

for the purpose of preventing a recurrence of the paroxysm, as bark, cold affusion, emetics, purgatives, opiates, to which I may add passions of the mind, charms, &c.* so much resorted to by the ancients, operate through the medium of the nervous system? I presume it is through this that the morbid concatenation is broken, and that the series of symptoms peculiar to intermittent, nay to every fever, is removed. To stop, therefore, the succession of events of uniform occurrence in febrile diseases, whether of the slightest kind, or of so severe a description as to threaten life, is making the first step towards a removal of the disorder. I wish, however, here to be understood that I do not mean to insinuate that some severe and sudden shock is to be resorted to in preference to more cautious means, under every state of constitution, and in all stages of intermittent, whether recent or protracted. I confess I should reluctantly attempt to employ cold affusion, or rather cold immersion, for instance, after the second or third paroxysm, where, in my opinion, an indiscriminate effort to prevent an approaching fit, may be followed by a dangerous determination to the head, lungs, or intestines: again, such a general practice in all cases of visceral disease, might increase the primary obstruction, or induce dropsy, jaundice, and dysentery, sooner than they otherwise would occur. However, I may venture to advance, that it is often of more moment to excite a strong and new action, than to controul or mitigate one that is morbid. It would not be difficult to adduce numerous instances of the inefficacy of relieving an urgent symptom, of directing the whole of our treatment to the abatement of those disordered actions which first derange the functions, and then produce the most unmanageable complications of disease, unless, at proper periods, the events of constant succession in fever, and so very remarkable in intermittent, be broken in upon, by exciting some new and powerful action on the solid fibre. I shall mention, by way of elucidation, that when, by the long continuance of intermittent, obstructions of the liver and spleen are induced,

* Les amulettes et les charmes furent en vogue de tout tems. Les prêtres et les rois, qui ce sont tour-a-tour disputè, le gouvernement des hommes, furent aussi ceux qui s'attribuèrent la prérogative de les distribuer. Avant même que les Grecs eussent pensé a faire un code de médicine, leurs hierophantes formaient des amulettes de toutes les substances les plus singulières que l'imagination pût leur suggerer. Qu. Sever. Sammonicus inventa ensuite le mot baroque *Abracadabra*, pour guérir la fievre hémitritie. Les Juifs attribuerent la même vertu à leur mot *Abracalan*. Les Arabes longtems aprés vantérent leurs talismans; les Europeens, l'attouchement de leurs rois et de leurs reliques. La consideration de la croyance des hommes sur ce point, offre le tableau singuliérement varié de leur faiblesse.

or,

or, when from the same cause, an irregularity of the circulation of the blood in the mesenteric vessels, or the vena portarum occurs, and a slight or passive inflammation takes place in the inner coat of the intestines, producing dysentery, I could not expect to restore my patient, by directing my treatment to the liver and spleen only, or to the passive inflammation of the bowels. In reality, however, these consequences of an irregular circulation, in different viscera, require their peculiar remedies, for though they are the sequel of protracted fever, they will not give way to the remedies resorted to for stopping a return of the paroxysms. I have to administer small doses of mercury, or purgatives, at proper intervals, by means of which I diminish and remove these consequences of the primary disease; but I contribute, in a very slight degree, if at all, to the removal of the fever. The morbid habit of the body remains: the paroxysm recurs, and demands a remedy that shall have the power to impart a shock to the system; in other words, to excite an action that shall resist its recurrence in future. Neither even can I stop the disease by relieving a determination to the head or stomach. When the urgent symptoms which this gives rise to in either of these organs, are effectually combated, I have yet to subdue the original fever. I have been led into this digression merely for the purpose of asserting that no plan or means were so calculated to suspend, or even put a stop to fever as the shock given to, or the change produced in, the system, by the powerful influence of another atmosphere, by the motion of a ship, and new habits; and, accordingly, a great number of the sick, under the full action of fever, in Walcheren, escaped a return of paroxysms, while they were on their voyage to England, nay, sometimes, for a week or ten days after their arrival, while, in a few instances, the disease did not return at all.* I suggest whether it is not probable that the violence of intermittent, and even a return of the paroxysms, might be obviated by enjoining activity to the sick, forcing them to make marches, and by giving, in short, complete occupation to the mind, and activity to the body, at the moment of inva-

" * I always advised those who were attacked in the beginning of the season," says Cleghorn on the diseases of Minorca, " to leave the island, if their circumstances would permit, and not to return until the spring; and there are many instances of persons being recovered by the change of air, even in the first two or three days of their being at sea. But if they were obliged to remain in the island, the best chance they had of escaping a relapse, was to take a dose of the cortex every morning and evening, for several weeks, and now and then a gentle purgative, if a bitterness in the mouth, loss of appetite, swimming in the head, or sickness at the stomach, the common forerunners of it, should be perceived."

sion

sion of the fit? I am persuaded that no harm could result from forcing the body into a state of unusual exercise; for even when soldiers are under the active influence of fever, they never suffer injury from transporting them to distant places; but, on the contrary, are frequently much benefited by the removal. We cannot be surprised at this effect, when we recollect how much life is modified by the various impressions we are daily experiencing; and since we find that the phenomena of health escape not some kind of modification from the operation of external powers, is it not evident that the general features of a disease should be distinguished by new characters, corresponding to the kind and degree of impression or shock exerted on the sensitive system, after the first commencement of a deviation from health?

It is unquestionably true that the fever of Walcheren underwent a change from such causes, after the arrival of the sick in England; nevertheless, as the disease had in many men been of very long standing, and had produced visceral obstruction, before they embarked, the alteration was by no means so striking and favorable in them, as *à priori* might be supposed. The principal effect occasioned by the voyage in a great majority of cases, was merely a temporary suspension of the paroxysms. In cases of recent date only, where the habit to a return of the disease was not confirmed, and where visceral obstruction had not ensued, did the voyage prove eminently serviceable. In other individuals, in whom the disease had been protracted, and on whom it had already entailed formidable consequences, the paroxysms after a temporary suspension, seemed to return with greater obstinacy and irregularity, seldom terminating their ravages but in organic disease of the liver and spleen, in diarrhœa, dysentery, or dropsy. It must be acknowledged that the uncertainty and difficulty attending the recovery of the sick, even under the most favourable circumstances, were much greater than might be expected; for, those of the convalescents, who were most restored, and whose uniform amendment portended a return of health, on a sudden relapsed, and were precipitated into the utmost danger. I have repeatedly known men, who had progressively mended for weeks, and who were free from any apparent organic disease, as both they and the physician were inclined to conclude, unexpectedly to be attacked with pyrexia, delirium, hurried and laborious breathing, pains across the chest, sometimes vomiting, a trembling pulse, general perturbation, diarrhœa, and hemorrhagies from the rectum, succeeded by dysenteric symptoms, great tenderness of the whole abdomen, sometimes a yellowness of the skin and clammy perspirations;

spirations; all which were fatal harbingers of approaching death, an event seldom deferred, after the individual had thus suddenly and unexpectedly experienced a relapse, for more than two or three days. It fell to the lot of every physician at Ipswich, to admit again into the hospital, many patients who had been discharged with every prospect of returning health only a few weeks before, oppressed with all the complicated consequences of the disease; nay, frequently to have a convalescent patient, unexpectedly attacked with hydrothorax, the result of a severe paroxysm, and expire in forty-eight hours, or to have him seized with several successive and irregular paroxysms that quickly entailed ascites, anasarca, and organic disorders of the bowels. Hence then we find the formidable and complicated consequences of the Walcheren fever occurring in their greatest latitude, in the sick concentrated on our own shores. The instances were but too numerous and lamentable at Ipswich, to prove that if the period for breaking in upon the events taking place in remitting and intermitting fevers was exceeded but a little, then those complicated consequences ensued which could only be combatted with advantage, by exerting an action both upon certain organs and the system at large, by those remedies which are known to act on particular parts and to change the condition of the universal system. No circumstance attending this fever was more distressing than a tendency to relapse in all the stages of its progress. To relapses were frequently to be referred a derangement of the functions and structure of the principal viscera, local obstructions, dropsies, diarrhœa, dysentery, nay, the combination of accidental diseases with the primary fever, such as pneumonia, catarrh, and gastric affections. There was no period at which the sick were not prone to relapse; most so, however, when the weather changed from dry to moist, and least of all after a few days continuance of frosty air. In consequence of the tendency of intermittent to recur in spring, little doubt can be entertained of many of the sick apparently recovered now, and who are exempt from visceral obstruction, again relapsing as that season advances. When once disease of the viscera took place, relapses were still more frequent, and gave an obstinacy and irregularity to the fever it did not before possess. In the ratio of protraction and recurrence of the fever, a swelling occurred in the right and left hypochondrium very perceptible to the touch, accompanied with a general enlargement and tension of the abdomen.* Much pain was

* "In several whom I have examined, after returning home, and in seemingly perfect health, these partial indurations appeared to me to be seated in the

was generally experienced when pressure was made with the hand under the ribs of either side, and frequently the Scrobiculer Cordis was effaced by the distension of the transverse arch of the colon. At the same time the legs were swoln, the face sallow, sometimes œdematous, the breathing short, and not unfrequently a discharge of thin and unnatural evacuations took place.

I shall next cursorily observe that during the prevalence of these symptoms and appearances, the exhibition of bark was seldom followed by any other advantage than the temporary suspension of the paroxysm, and indeed, in a great variety of cases, where its employment was not interdicted by the presence of dysentery, or some affection as adverse to its operation, it proved an inefficacious or a hurtful remedy. I shall hereafter shew how far the bark availed in the stage of the disease I had to conduct, in preventing those obstructions from forming, which produced ascites and probably dysentery, I may add, in enabling the constitution to oppose all the common consequences of intermittent.

No fact is better established in medicine, than that no organ or set of organs can sustain disease without communicating disorder to other parts, or to the whole body. I believe that in many instances the Walcheren fever would have ceased but for the derangement it had occasioned in the abdominal viscera, through which it was frequently recalled, becoming in some measure a secondary disease by means of that consent or sympathetic connexion of one part with another that maintains the reciprocal influence between the sensibility of the whole frame, and that of the several organs that serve to perform the varied functions of the animal economy. Where a habit to disease is formed, the slightest circumstance is frequently sufficient to revive it, especially if that habit has not long been broken, as is often the case with remitting and intermitting fevers, which thus return as usual when invited so to do by local or general causes. The whole system when the disease had entailed obstructions on the abdominal viscera, was evidently much deranged from this cause, a derangement visible at

the spleen. And although there is reason to think that this organ, of all others, is the least essentially necessary for life, yet, when it became so swelled and enlarged, as to exceed four, or even five pounds in weight, as I have once seen it, though not in men who ever were in Africa, it is no wonder if such an uncommon tumour should, in process of time, very much affect the viscera, by disturbing their natural situation; and no wonder if, in consequence of these disorders of the parts, which prepare nourishment for the whole body, the solids and fluids in general should be so much indisposed, as to make way for dropsies, of the belly especially, and anasarcous swellings of the legs." *Bracklesby.*

all

all times; still, these affections independent of a uniform bias they gave the constitution, modified in some way or other, the original disease, and gave it a character of irregularity which it did not possess at its first invasion. To this cause were no doubt to be attributed the failure of the practice commonly employed for stopping intermittent, the tendency to relapse, the protraction of the fever, and the accumulated miseries of the patient. The system in these cases, affected secondarily by circumstances connected probably with the nervous system, suffered from a fresh irritation, which in its turn, occasioned an extension of the visceral disease in consequence of the morbid action it imparted to the heart and blood vessels, increasing the obstinacy of the local affection, and being thus in turn increased by it.

I have heard it remarked that the disease of Walcheren had occurred in some instances posterior to the arrival of the men in England, and that even the same disease had appeared in persons who had not been ordered to that island; but this last assertion, however, is known to be so erroneous, as scarcely to require refutation. Nevertheless the authority of eminent men is not wanting to shew that intermittent is of a contagious nature. Wilson is of opinion that it may be imparted from one person to another, though perhaps not oftener than once in 1000 times! I know it has been stated, that ague introduced by an individual of a family, has successively attacked all the members of it, though they were not placed within the reach of marsh miasmata. A singular circumstance, it may be remembered, is mentioned by Trotter, of a vessel that was moored near to leeward of another having many men ill of typhus, and of some of the crew of the leeward vessel being seized with agues. Let those too who deny the infectious nature of intermittent, consider well the analogy of it with other fevers which are known to be infectious. Clark says that all fevers are not equally contagious, those being most so, where the fever tends to a continued form. With respect to the other remark, I found upon enquiry, that there was so striking a similarity between the situation of the sick who were supposed not to have been attacked with the fever of Walcheren till after their return to England, and their situation when abroad, that very little doubt existed in my mind of their having had, at some period antecedent to that in which they were committed to my charge, remitting and intermitting paroxysms, though they were not so distinct as to be evident to themselves. I was informed by my patients, who denied having had the fever abroad, that they were nevertheless attacked in Walcheren with pain in the right hypochondrium, that all their

their secretions diminished, that their abdomen grew hard and tender, that their legs swelled, and that they were very sallow, yet positively declaring that they had never been attacked with the fever; a circumstance which seems to favour an opinion of the fever itself having sometimes originated in obstruction of the viscera. Precisely, however, in this state I found numbers of the sick at Ipswich: but upon a further investigation of their complaint, I was enabled to detect exacerbations of fever, remissions, and irregular intermissions, sometimes extending to one day only, at others two, but more generally with intervals of so short a duration as to leave the patient exposed to a paroxysm every day, not however of the same severity each time of its invasion, nor of regular periodical occurrence. Having thus discovered that the situation of the sick in Walcheren and England was similar, I concluded that the disease with which they had been attacked in the beginning was uniformly the fever of the country; only that on account of its irregular and indistinct paroxysms, perhaps at first concealed under the feverish irritation occasioned by obstructed viscera, the real nature of it was concealed from an observer so inexperienced and heedless as a soldier. Though some men were not even attacked with the disease till subsequent to their arrival in England, it is no proof of its not having originated in Walcheren. There is not that I know of, any particular and definite period for the reception of marsh exhalations into the system, and their action upon it. They have occasionally been found not to operate until weeks after the person has been exposed to their influence. There are certain symptoms, which were they accurately noticed, such as debility, an oppressio virium, nausea, and head-ache, with which men were frequently seized before the fever appeared, indicative, in my opinion, of the difficult admission of the miasmata into the system, which seemed to await for some favourable change, as that, for instance, occasioned by exposure or irregularity of any kind, that would favour their entrance into, and operation on it. In every instance of disease, as far as I could ascertain, that fell to my lot to inspect, remission or intermission of the fever more or less evident, occurred, and where I was left ignorant of this its true appearance and character from the imperfect representation of the sick, it was usually confirmed in the presence of those consequences which it is known invariably to entail. Admitting, however, that the fever had not in every case manifested itself in Walcheren, it merely proves that with a predisposition existing after the application of the exciting cause, the constitution, under particular circum-

stances,

stances, had the power of suspending the action of miasmata for a time, but ultimately yielded to their influence when such a power ceased to act. That predisposition to which I allude as existing was strongly marked in the general relaxation of the fibres in every individual who afterwards was attacked with the fever, in an oppressio virium not easy to describe, in a universal languor, dejection of spirits, anorexia, and always combined with a vitiated state, suppression, or diminution of the intestinal and biliary secretions.

Since the sickness of our troops in Walcheren, and the great mortality that happened amongst them, both in that island and on our own shores, arose from remitting and intermitting fever, an attempt to give some account of it to the public, as it appeared in England, by a person appointed by the Medical Board to attend the sick, may be pardoned. I shall leave the opportunities I had for observation and absolute experience to plead an apology for coming forward. The subject, it will be admitted by all scientific and professional men, is worthy our investigation, and ought to be reviewed by those to whom opportunities were given to watch its progress, tendencies, and terminations. Many valuable remarks on remitting and intermitting fevers have undoubtedly been published by authors of high reputation, at various periods, yet a wide and in some measure, new field for observation was opened in the fever of Walcheren, in which every peculiarity of symptom, variety of combination, and modification of remitting and intermitting fever were met with that had ever been known to characterize these diseases in the several stages of their progress, nay, perhaps more complicated consequences than have heretofore been ever noticed. In every soldier who was suffering from a protraction of the fever, a particular train of symptoms and appearances, as well as a tendency to certain terminations, gradually manifested themselves, stamping a character on the disease that gave to it the form of irregularity and complication, at the same time that they pointed out indications to fulfil, different from those which had hitherto been deemed expedient. Some of the varieties of the disease seemed to originate in peculiarity of organization, in its combination with other disorders, and in the affection of certain organs in the abdomen; but many, when we reflect on the peculiar habits and life of a soldier, may justly have their source imputed to partial exposure to cold and damp, debility, improper food, and acts of intemperance, all which, as well as many other causes, modified the disease, gave it obstinacy, and rendered it sometimes a chronic, rather than acute complaint. From the above-mentioned causes, cough, pneumonia

pneumonia, disorders of the bowels, and gastric affections intervened, and as was most distressing to the practitioner and patient, did not subside by the usual treatment, and leave the intermittent in the degree of force it possessed previously to their attack, but interwove themselves with the other morbid phenomena, constituting with them a most complicated and obstinate disorder. In a similar way, no doubt, intermittent has at all times been made to present numerous diversified phenomena in a ratio with the activity of external powers, its combination with the other disorder, and the sensibility of the system. The symptoms of a specific kind, which could be traced to the obstruction of certain viscera, as to their root, will be much dwelt upon, both with a view to shew the tendencies of the disease to certain terminations, and the peculiarities which have arisen in it, or to point out whether those characters and consequences which have accompanied and followed this fever, are entitled to such a denomination ornot.

The type and severity of intermitting fever will be found to depend much on the constitution of the individual, the degree of activity which marsh exhalations possess, probably their accidental combinations, the season of the year, the situation of the country with respect to its immediate *vicinity*, its extent, connections,and numerous minute circumstances, connected with the individual and the insalubrious spot ; while the consequences of intermitting fever will depend upon the duration of the fever, the degree of its violence, the idiosyncracy and propensities of the constitution, the situation of the sick with respect to air, diet, and the medical succour they obtain. A little reflection upon these subjects will enable us to know why the soldier who arrives in an unhealthy country, possessing health and vigour, but exposed, by the profession of arms, to hardships and privations, experiences more severe and frequent attacks of intermitting fever than the native, whose organization is gradually moulded to, and brought to resist with some effect, the influence of an insalubrious atmosphere.

While I am glancing at the irregularities, tendencies, peculiarities, and terminations of the Walcheren fever, it may not be improper here to state that the influence of the weather on the sick, even in the advanced stages of this disease,, was remarkable. In the beginning of October, when the weather was fine and dry, no modification of the disease arose from the combination of accidental complaints with it. The disease advanced, and its consequences succeeded, in a certain order, its fatality depending upon its own force, and the extensive

tensive mischief it produced in the viscera. In November, many inflammatory affections of the lungs and bowels occurred, sometimes rheumatism; during the height of which the paroxysms of ague were suspended, but recurred when those diseases abated. The intermittent, for a time, gave place to continued pyrexia, which, in its turn, was carried off in an accession of ague. As in the preceding month, intermittent offered varieties in its appearance, depending upon its own character and not upon any modification from the weather. As then too, it frequently terminated in dropsy, diarrhœa and dysentery. At the latter end of November and the beginning of December, accidental combinations were less frequent; still there were some inflammatory affections of the throat and chest, which now and then became difficult to treat. The elevated situation of the hospitals at Ipswich subjects the sick to the sole inconvenience of a sharp dry air; which for the most part occasioned thosecomplaintsthat arise from such an air acting on constitutions relaxed by previous disease, so that the chief adventitious disorders modifying the original fever, were pneumonic, and rheumatic complaints, bowel affections, and angina.

As is not unusual, the fever which attacked the British troops in Walcheren did not, if my information be correct, uniformly declare itself with the same type, nor indeed with the same appearances, being one while continued, then remittent or intermittent, and changing its type again from these to the continued character. When the health of the men first began to decline, continued pyrexia succeeded, a derangement of the principal functions occurred, there were lassitude and debility, which were sometimes quickly followed by a remission of symptoms,ora paroxysm of intermittent; at others, not till several days had elapsed,did the paroxysms occur,and in some instances it appeared to precede all these other affections. When the fever began to develope itself more fully, it did not always leave periodical intervals of the same duration, though more generally after the occurrence of a complete paroxysm, it was succeeded the following day by another paroxysm of less severity, the violent and more genuine accession of fever not occurring till the third day, if we include that on which the paroxysm first happened. Notwithstanding an essential similarity exists between fevers of an intermitting nature with respect to their invasion, progress, and termination, there are many differences requiring to be noticed by the practitioner, both for the purpose of enabling him to apply his remedies with more success, and for furnishing him with an accurate knowledge of the particular types which these fevers assume.

It

It is not for me here to enter into a minute description of the various appearances of the epidemic fever as they presented themselves in Walcheren, nor to detail from the accounts of others, the progress, termination, types, and anomalies of that disease, but to confine myself to a description of its different forms, character, and distinctions as they occurred after the arrival of the sick in England.

SECTION II.

DEFINITION AND PECULIAR DIAGNOSTIC.

Before I attempt to describe the fever of Walcheren, as it appeared in the British troops returned to England, let me first remark that the various types which it assumed, the anomalies it was attended with, the great irregularity of the paroxysms, their variation in point of duration and violence, and imperfect terminations, make it rather a difficult task to convey to the reader a tolerably accurate account of the numerous distinctions which are necessary, in my opinion, to be given. It is my business, however, to undertake this in the present section.

The Walcheren fever assumed the quotidian, tertian, double tertian, and quartan, and even remitting type, in this country: but of all these the most common was the double tertian, as I shall take occasion to shew.

It seldom happened that a period of the fever, comprising about forty-eight hours, was regular, that is, that during the period, there was but one paroxysm, and one interval, for more commonly the paroxysm ran out to undetermined lengths, came on at all hours of the day, and went off at uncertain periods, and in an imperfect manner. When the disease, however, did assume this type, there was a similarity in it with tertian, of a simple, but marked notwithstanding with more or less of an irregular character. Where visceral obstruction had not run to any great extent, I have known an irregular tertian of this kind become more regular and complete as the disease has advanced: but where the viscera had been organically affected, a period that preserved a certain uniformity in the beginning has gradually become confused and indistinct after a lapse of twelve or fourteen days. In this state of the body, and in this stage of the fever, the febrile phenomena were often rather of a continued kind with the exacerbations, than of a genuine intermittent nature. Or, instead of one paroxysm, and one interval in each period, there were two intervals,

tervals and two paroxysms, differing, however, materially as to the violence and duration of symptoms, the hours of invasion, time of decline, and termination. Neither in this variety of the disease did any of the subsequent paroxyms exactly resemble the preceding ones. I do not recollect that this double kind of tertian bore an affinity in its accession to the third paroxysm and the first, or the fourth and the second, as authors have described. A patient attacked with this form of intermittent would generally have a paroxysm every day, of increased severity one day, and of mitigated violence another. While thus visited by the fever for the space of a fortnight, or perhaps three weeks, a distinct type might be observed, but gradually it would now and then assume another character, leaving the patient free from any paroxysm one whole day in three or four. After having continued the double tertian type for the space of many days, I have known it change into a simple distinct tertian, and then again return to its former type. This, however, was not a common tendency. The duration of a double tertian paroxysm was extremely variable, sometimes it lasted only six or seven hours,at others twelve; while in some complicated cases,one paroxysm has scarcely terminated before another has commenced. Besides these types, which variously extended and shortened, were by far the most common ; there was a variety of the disease in which, on one day, there were two paroxysms, and on another, only one, while in other species of the fever, there has appeared to be a constant succession of paroxysms, one beginning as soon as a preceding one had ended. Here then was a continual kind of tertian, or at least a fever of such obscure intervals that, strictly speaking, had much of the character of remitting fever. But the most common type by far, was that of double tertian, which variously anticipating and postponing, gave a peculiar mixed character to the disease, rendering it anomalous in nature,and tedious to the practitioner to treat. I have observed this double tertian to anticipate every day, an hour each time, until the paroxysm, which at one period, began in the middle of the day, has commenced at three or four o'clock in the morning: while on the other day, the paroxysm has returned an hour later each time, until it at last has been postponed till a late hour in the evening.

In almost all the long standing cases which were committed to my care, the accessions of fever seldom came to the critical termination, that paroxysms of intermittent of a more recent date usually do. The pyrexia was frequently very great, but the sweating stage slight and imperfect, nay, sometimes a mere clammy moisture of the skin succeeded ; little, or no lateri-

tious

rious sediment appeared in the urine, and the bowels, unless previously disordered, seldom became affected in any particular manner. The paroxysms always left the appetite impaired, the rest disturbed, and induced a drowsiness approaching coma, oppressio virium, dejection of the spirits, emaciation of the body, diminution of the strength, and irregularity, sometimes vitiation, and at others, suppression of the secretions. In a few instances the disease ceased spontaneously for a week or ten days, but left the patient oppressed with visceral obstruction, having little power of exercising his mental or bodily faculties: but, far from having subsided altogether, it appeared only to cease for a moment, in order to attack with more fury, and renew its depredations on the viscera of the abdomen, which were, in this case, not unfrequently seized with some inflammatory action that augmented the organic disorder, and quickly induced dysenteric affections and ascites. Never did this intermittent indirectly induce a vigorous state of the body, a circumstance that has been observed to occur after such a disease, nor did any paroxysm of unusual severity and incidence, for such paroxysms have now and then happened, ever produce at any period of the fever a crisis capable of putting an end to it. I have read and heard of this happening in intermittents of a tertian type, where its progress has been marked with irregular and anomalous appearances. Whether the same critical termination did not take place in the sick at Ipswich, because of the extreme debility present in every instance, and because the duration of the fever and its combinations with other affections, modified it, and disposed it to certain terminations, I cannot determine, but, certain it is, no such crisis ever fell under my observation. It is worth remarking that the irregular double tertian type which I have said was by far the most frequent form of the fever, two paroxysms being observable within forty-eight hours, was often confounded with quotidian, and mistaken for some febrile affection of a hectic kind, attendant upon visceral obstruction. To an experienced man the difference was obvious, but when the double tertian was postponing every other day, and the fit slight in a case of protracted fever with disease of the abdominal viscera, itself occasioning exacerbations of fever, and constant pyrexia, the distinction was not always clear to the younger practitioner.

The time of the day at which the paroxysm occurred was never uniform. Cullen thought the period of accession was always precise, and I believe it may preserve a certain uniformity over the same country, but it will vary much in different parts of the world, and in different circumstances of the body.

Not-

Nothing seems more difficult to solve, than the cause of the recurrence of paroxysms at stated periods. It is more inexplicable than that the appetite, though gratified, should nevertheless recur at the usual hour, or that the alvine discharge, sleep and waking, should be governed by periodical laws. A general law, at least, if not the law of habit, presides over the return of paroxysms of intermitting fever.* In some of the few patients of mine who had quotidian, the paroxysm came on between one o'clock and eight in the evening, rarely sooner or later. By far the greater number of paroxysms attacked about four or five o'clock, a period when quotidians, according to Dr. Jackson, have been observed to come on in Jamaica. With respect to the time of invasion of the Walcheren intermittent, I have before said, that it attacked at all hours, but most generally occurred in some of the diurnal hours. In the anticipating and postponing double tertian paroxysms, the accessions now and then occurred in the nocturnal hours, but many times I have observed a tertian that was postponing an hour daily, stop between the hours of eight and nine in the evening, and recur several times at the same period, after which the paroxysm has passed the night and returned the following day, occupying again in succession the diurnal hours.

In the instances of two patients, I witnessed several times, a nocturnal respite from the paroxysm. I even think the force of the succeeding paroxysms, occupying the diurnal hours, was mitigated by the order of the double tertian being thus broken in upon. Dr. Fordyce has remarked that this peculiarity in tertian is not of uncommon occurrence, who also, in allusion

* On a beaucoup théorisé sur la cause de ces retours et repos des fiévres intermittentes, les praticiens s'accordaient à l'attribuer au retour de labile dans la masse des humeurs, lorsque le docteur Bannes, qui un des premiers a fait un systeme des maladies appuyé sur les nouvelles notions de chimie, l'a expliqué de la maniere suivante : "quand, dit il avec une énergie convenable, du système organique l'hydrogéne carbonè surabonde dans l'economie animale, comme il arrive toutes les fois que le sang ne pêut se decarboniser ni se déshydrogéniser convenablement, il doit en résulter une décroissance progressive dans la force du système vaseulaire ; bientôt le frison, le froid, le spasme ont lieu, et constituent, le premier tems d'un accés fébrile. L'hydrogéne carboné, qui dábord nétait que mêlé avec le sang, s'y combine plus ou moins etroitement, et cette combinaisonne pouvant se faire sans dégagement de calorique, la chaleur revient et se proportion ne à la force de ce dégagement. Les effets ordinaires de l'action des vaisseaux et de la circulation augmentée entretiennent et augmentent la chaleur qui caractérise le second tems de l'accès. Enfin, dans la destruction des certains composés et la recomposition des combinaisons nouvelles, aidée par la température à laquelle la chaleur élève le système, un gas aqueux se forme avec plus ou moins de profusion, et les coiteurs ou les sueurs générales qui constituent le troisième tems de l'accès febrile, amènent le calme et la fraîcheur par l'effet même de la vaporization."

to

to the time of attack of fevers, observes, that the accession, in most cases, takes place in the morning. The most rare type of any was the quartan, which seemed to be confined to men of a delicate and debilitated constitution. I saw but few cases of quartan, and all the sick under the influence of this variety of the fever, were oppressed with extensive visceral obstruction. An intermittent of this type was just as obstinate to treat as any of the varieties of tertian, being generally combined with serious debility and extensive local disease. All the patients entrusted to my care with this type of the fever were very prone to diarrhœa and dysentery, which alternated with each other, occasioning disorders of the stomach, thirst and pyrexia. Neither did these affections cease in proportion as the obstructions of the spleen and liver were removed, but constituted, as in other cases, a most unmanageable disease, accompanied with a long train of distressing symptoms which wore away the patient's strength, and ultimately exhausted him. Even though a return of the intermittent paroxysm were prevented, nothing in the form of medicine or diet could enable the patient to resist the destructive operation of these disorders. An emaciation of the body, daily exacerbations of hectic, local pains and general irritation, were the patient's sad attendants. On his countenance dismal despair was strongly stamped: in his mind existed a perfect sense of his danger. The type of quartan was less subject to irregularity; the intervals were distinct, but the violence of the paroxysm was equally severe. It did not degenerate into continued fever, but exposed the patient to the same relapses as other forms and types of intermittent. Previous to the accession, the diminution of strength was more remarkable than at the approach of tertian, and the consequences entailed upon the viscera were equally great. Two or three of the men suddenly dropped down at the accession of quartan, but to the best of my recollection, the debility which preceded bore no exact proportion to the violence of the fit, nor did it seem to announce any particular danger. I began to think that debility here was to be considered as one of the principal symptoms of the disease, and not a mere effect of diminution of strength occasioned by former attacks of fever. I have no doubt of the debility observable on the invasion of different fevers being one of the principal phenomena of the disease. I have known paroxysms to come on with syncope, and a sudden debility that was really alarming. In hot climates, the yellow fever, the plague, the low remitting fever are all ushered in by excessive diminution of strength, as if this constituted one of the remarkable symptoms of each of these diseases.

Hence I considered the debility with which many of my patients were seized as a precursory symptom of intermittent.

Having made these preliminary observations, I shall next give a more particular account of the disease, first premising that in enumerating the phenomena of the paroxysm they will not be found uniformly to offer the same appearances; that every modification of the fever was formidable and introduced new mischief into the system or its parts, and that a train of anomalous phenomena often arose out of these modifications which formed differences both with respect to the symptoms attending the paroxysm and the consequences it entailed on the constitution. At no time, however, did anomalies become more conspicuous than in the intervals. Without my being able to trace from what cause these phenomena proceeded, a patient was seized after the paroxysm had passed over, with pain in the head, had a confused state of intellect and then erroneous perception which prevailed for two or three days, and terminated in coma, and torpor of the whole body. At other times there was continued pyrexia with disorder of the stomach, indicated by the whiteness of the tongue, distension and uneasiness of the epigastric region and anorexia. Then the bowels became painful, acted with frequency, and discharged a great deal of mucus or blood intermixed with the fæces. Wandering pains in turn occupied the head, chest, and abdomen. The patient complained of severe lumbar pain, at times experienced strangury and made bloody water. The face occasionally became flushed, and then œdematous. No posture was easy to the patient, he was languid, dejected, and indifferent to all surrounding objects. His pulse was sometimes quick, at others slow, intermitting, or irregular. With several of these symtoms upon him in an interval of the fever, he was attacked with rigors, slight exacerbations of fever of a hectic kind; and in the evening a cold clammy moisture came upon the arms and breast, excessive thirst, sometimes palpitations of the heart, cough, and difficult respiration. Whenever these phenomena were present and a paroxysm was about to supervene, they disappeared in the greater conflict the constitution was upon the point of engaging in; but when the paroxysm passed over, several of these anomalies re-appeared, so that the patient, even in the interval was never left perfectly free from the influence of morbid phenomena: hence arose the difficulty of fixing upon an efficacious treatment, and the perpetual sufferings of the sick, independent of the embarrassment which the patient and practitioner experienced from the fever so often personating other complaints.

In

In the most common type of the fever, double tertian, it attacked at all hours, and generally began with nausea, extreme lassitude, and a sense of cold extending from the shoulders to the bottom of the back. Local pains in the arms, leg, and back soon succeeded; then the skin felt cold to the patient, though it really was affected with an unpleasant heat and dryness; it became shrivelled and rough, after which a shivering came on, more or less severe, ushering in the paroxysm, sometimes with mildness, at others with violence. The respiration quickened and became laborious, the face grew pale, the extremities livid, and the body cold; anxiety and dejection of spirits commenced with the attack, but now increased so much as in many instances to approach syncope, resembling a fever termed by the ancients *Syncopalis*; imperceptibly the skin became smooth, and a burning heat was soon perceived over the whole body, the respiration was less hurried but short and uneasy, the pulse became rapid and full, general pains were felt in the limbs, head and back, the head was very uneasy, delirium succeeded dejection of spirits, the eyes were full and inflamed, the whole countenance red and tumid. During this general perturbation, the patient was unable to remain long in the same posture, and experienced a peculiar heat, uneasiness and distension about the abdominal region, which were more remarkable when the disease was combined with visceral obstructions. Frequently the intellect continued disordered through all the stages of the paroxysm. It was a confusion of thought, forgetfulness of situation, a muttering delirium, or wildness of imagination that singly or in turns harassed the patient. The hot fit being about to decline, the symptoms began to abate. Imperceptibly at first, but distinctly afterwards, the pulse became expanded, a moisture broke out upon the breast and face, sometimes over the whole body, the skin grew soft, the pains in the head and extremities subsided, the tongue mostly foul and dry, became moist, the countenance assumed an air of serenity, the urine flowed, but was variable in quantity and appearance, and the patient fell into a profound sleep which sometimes continued till the approach of a subsequent paroxysm.

It would be an endless task to attempt to enumerate all the species into which this fever would admit of being divided, but there is one that I think it important to mention, on account of its very frequent occurrence, I mean the *Assodes* of the ancients, a variety of the fever which I am inclined to believe, from the disordered state of the abdominal viscera, was more common than was generally suspected by practitioners. This variety of the Walcheren fever directing its force to the abdomen in particular, I have no doubt was one reason of the frequent obstructions

structions of the viscera contained within it. I have described the phenomena of the paroxysm in double tertian which may serve as the standard in point of usual progress of every other kind intermittent, but such, I have to observe, was the variable nature of the fever under consideration, that no two paroxysms exactly resembled each other, neither did each period preserve the same type, so that new symptoms and new appearances were constantly presenting themselves to notice.

The cold stage of the double tertian, sometimes consisted of a rigor merely, followed after the space of an hour or two by great heat, which continued for an uncertain number of hours, generally from six to eight: but commonly the cold fit was distinct and well marked, lasting from two to three hours. To it succeeded intense heat over the whole body, which in the more distinct cases of intermittent terminated in a copious perspiration, or a large flow of urine. In the slight double tertian paroxysm, ushered in frequently by rigor and moderate febrile symptoms, the termination was always more confused and incomplete than when the severe paroxysm, which occurred the day following, came on, though even the regular solution of this rarely happened, at least not in such an order as for all symptoms to abate or vanish. Where the termination of the fit was even tolerably complete, there remained many distressing symptoms which demanded the physician's attention. The patient complained of acute pain in the chest, the stomach or the head. When this part experienced pain long, delirium or a stupid drowsiness never failed to follow. He was attacked with diarrhœa, sometimes dysentery, a partial suppression of urine, and felt a sensation of severe oppression at the præcordia and of approaching syncope.

At the height of the hot stage there were sometimes palpitations of the heart, a violent cough, sickness and vomiting, a particular tension of the abdomen, and repeated hæmorrhagies from the nose, many of which symptoms would persist after the paroxysm was over, and create considerable confusion during the interval. There was no certainty with respect to the duration of the paroxysm, it becoming shorter or longer according as it happened to be combined with anomalous symptoms, or to preserve its natural order and simplicity. The paroxysm has lasted ten, twelve, fifteen or twenty hours without coming to any distinct solution, nay the stronger fit has continued till the slighter one has commenced, the two paroxysms becoming thus identified in one. The interval has in some instances really been so indistinctly marked, that the fever partook much of the continued, or at least remittent form. When the order of the periods became so completely overturned

turned as this, it was extremely difficult to bring the fever to its proper type again, the continued fever, or long continued paroxysm, being generally connected with visceral obstruction. It rather announced complication and obstinacy, than danger, unless the paroxysm was violent as well as long, and accompanied with considerable debility. Nevertheless, I universally found subintrant paroxysms serious, and especially if they were combined with dysenteric affections, or arose out of some sudden and unexpected modification of the first type of the fever.

In the next place there was no certain time of invasion of this fever. Although the paroxysms had a distinct termination in one period, and the progress of them was regular, yet in the following period the paroxysms occurred at different hours and varied both in violence and duration. Neither did they leave the interval so distinct, but precipitated the patient into a stupid insensibility and continued pyrexia, from which he did not recover before another fit took place. If these symptoms persevered for two or three periods they never failed to produce great confusion and severity in the subsequent paroxysms, and always placed the patient in the greatest danger, inducing phrenzy, which made him attempt violent and inconsistent acts, or a profound coma which separated him from the rest of the world. I have known paroxysms begin with great mildness for the space of ten days or a fortnight, but gradually encrease in severity, sometimes bearing a certain ratio with the encrease of diarrhœa and dysentery; but I have seldom found them become milder spontaneously, after they had thus progressively gone on augmenting. There was no possibility of forming an accurate knowledge of the situation of the patient, and of his recovery, from the mere variation of the type of the fever, the hour of invasion or the duration of the fit. This was better ascertained by attending to other appearances, the extent of visceral disease, and the state of his strength.

I shall here however more fully point out those symptoms which foreboded danger and those which announced a favourable termination of the fever. When the paroxysms and intervals became so confused as to make the distinction difficult, when the paroxysm was long and protracted, and pyrexia was constantly present, if the pulse were small and rapid, the perturbation of the body great, the tongue hard, dry, and black, the odour of the body fœtid, the mouth and teeth covered with sordes, and a discharge of black matter from the rectum frequent, the situation of the patient was extremely dangerous. Or, if these subintrant double paroxysms were attended with a furious or low muttering delirium, intense coma, and such extreme debility that the patient could not

not support himself out of bed, if the epigastric region and abdomen were so tense and tender as to experience great pain on being pressed with the hand, if acute pain were felt in the abdominal viscera together with a burning sensation, if a vomiting of dark green bile came on, if the urine were clear, bloody or fœtid, if evacuations were black, numerous and offensive, and a cadaverous smell and look were perceived, they were to be considered as certain signs of approaching death.

But even if these symptoms were less violent, or only a part of them were present, they were the forerunners of extensive inflammation of the abdominal viscera, suppuration, or dysentery: in which case the fever would still continue to return for days or weeks, presenting numerous differences in each paroxysm, and invading at all hours, changing from the double to the simple tertian type, and from this to double subintrant paroxysms with a fever more similar to Assodes than any other variety of intermittent described by authors. When the patient was visited by these paroxysms, the debility was great, and visceral disease extensive, no critical discharge by stool or sweat ever occurred, or indeed ever could take place with permanent advantage. He was subjected to all the exhausting consequences of chronic disease of the abdominal viscera, and a perpetual prey to hectic, when relieved from the more distressing struggle of intermittent paroxysms. But the patient's case was invariably hopeless, when under visceral obstruction, the paroxysms were long, and of frequent occurrence in the nocturnal hours, especially if in the progress of the fit he was faint, and the body remained cold; or if the heat succeeding a mild cold stage were intense, and the patient became senseless with a ghastly countetenance, the omen was by no means more favourable. If at this time the body became of a deep yellow tinge, and the abdomen grew very tense and tender, they were indications of the fatal tendency of the disease. I have known a great many of these bad symptoms return with the paroxysm, and go off with it, for days before the patient has expired, yet when there was a concurrence of the major part of them, and the patient was exhausted by the frequency of the paroxysms, gradually a fixed ghastly look, combined with dismal despair, was impressed upon every feature of the countenance, an excessive irritability of the stomach succeeded, the pulse became irregular and intermitting, the patient lay upon his back with his eyelids half closed, his skin was cold and clammy, he passed his urine and stools involuntarily, a tremulous motion of the muscles of the arms and legs supervened, and he had frequent singultus which alternated with deep sighs. A few hours before death, the patient shook off delirium, or revived from his lethargy,

lethargy, he recovered his senses, became composed, and apprized the bystanders of his approaching end.

In the course of the succession of these fatal phenomena, symptoms of amendment now and then beamed forth, and suspended the patient's miseries, but they were in general fallacious, and quickly followed, in the next paroxysm, with an increase of the bad phenomena, which then not unfrequently terminated in sudden death. The fever, however, was not, as in the beginning of intermitting and remitting disorders, of that violent and acute description, as to enable the practitioner to prognosticate with certainty on what day or period the patient would expire. He could only form a judgment of the approaching danger, by the gradual exhaustion of the patient's strength, the perseverance of the paroxysms, and the consequences they entailed on the viscera; and rarely by any critical day indicatory of the termination of the fever. Nevertheless, it is true that some patients died in the cold stage, though those who fell victims to the severity of the paroxysm, more commonly went off in a state of apoplexy during the hot fit.

In some instances of this fever the secretion of bile appeared to be copious; but in general it was defective. I have sometimes known the urine as well as the skin to be tinged of a deep yellow colour, at the same time that the patient threw up green bile in abundance. The paroxysms in this case were very severe and subintrant, great delirium prevailed, as well as constant pyrexia. The lips and gums became quickly covered with dark sordes, the tongue grew hard and black, the pulse feeble and irregular, the respiration hurried. The patient caught at imaginary objects, lay upon his back, and had a convulsive motion of the extremities. In short, his situation was similar in appearance to that of a person attacked with typhus, a disease he was thought by some practitioners to be seized with.

In every variety of the fever, it was a bad sign when the patient swallowed with difficulty, and complained of soreness and swelling of the tonsils. The discharge of dark fluid, resembling coffee grounds, from the bowels, implied a hæmorrhagy of the intestines, and very often preceded dysentery with continued pyrexia. If vomiting gave no relief, and did not subside with the paroxysm, it proved a most distressing symptom, and was not unfrequently the effect of inflammation of the stomach.

Having enumerated the bad symptoms attendant upon this fever, let me next point out those which were more favourable, first mentioning that even in these appearances, the practitioner

titioner was frequently deceived, a mild type often degenerating into one that was confused, and unexpectedly producing the most complicated consequences. If the paroxysms did not exceed ten or twelve hours and left perfect apyrexies, if the bowels acted regularly, and without pain, and gentle sweats gave relief and solution to the paroxysm; if the patient's strength did not sink, and his appetite was natural: if the abdomen preserved its usual size and softness, and was free from acute pains; lastly if the patient rested well, and was exempt from coma, the prognosis was good: but if, instead of profitable sweats, the skin remained dry and hot, and the abdomen became tense and uneasy, it augured that the disease would be long, and had already induced obstructions of the liver, spleen, pancreas, and mesentery, nay, foreboded the usual termination in dysentery, or dropsy. I found, as Bursarius has done, that a præternatural appetite was a sign of a long and obstinate disease. When a paroxysm in any species of the fever, became anticipating, it did not portend danger, neither did a postponing fit imply any thing very favourable. In the early stages of intermittent, it may portend a change of type to a remittent form, but in this fever it merely seemed to constitute one of its irregularities. Anticipating paroxysms have sometimes been accompanied with an increase of violence of the symptoms, but then the fit has come to an earlier termination. When the tongue was dry, and much uneasiness prevailed in the head and abdomen, in the interval, and the patient stretched himself frequently, and experienced faintness, it denoted length and severity of the disease.

I have known patients recover, in whom the double tertian type had recurred for weeks, when effusion had taken place in the cavity of the abdomen, when the liver and spleen had become considerably enlarged, and when the organic disease which they had sustained, had interrupted all the principal functions, and produced great irritation in the vascular system. I have known those in whom every symptom of local and general disorder has disappeared, on a sudden be seized with subintrant paroxysms of great violence, and quickly die from the concurrence of those morbid phenomena I have before described. There was often a train of symptoms that indicated the dangerous situation of the patient, without, however, being uniformly the harbingers of death; such as frequent indistinct paroxysms that never came to a natural termination, constant pyrexia, a tremulous pulse, palpitations of the heart, oppression at the præcordia, difficult respiration, dry brown tongue, delirium, coma, dejection

jection of spirits, bloody stools, flushed and œdematous countenance, and debility. The presages of death were by no means certain when these symptoms were present, but they always announced great danger. All these remarks tend to shew how deceitful this fever was, that, when least expected, a patient would recover, and, contrary to expectation, sink in some paroxysm that was not in the least indicated in the patient's situation. Or, if the termination did not tend to an immediately fatal issue, water was on a sudden thrown out into the cavity of the abdomen, or into the cellular membrane, which ultimately carried the patient off with equal certainty. In general, however, these changes indicated returning health. When the hardness in the hypochondria gradually subsided, when the abdomen could bear pressure without feeling pain, when no tendency to diarrhœa or dysentery manifested itself in the course of a protracted disease, when the breathing was free and easy, the countenance serene, the complexion clear and divested of its morbid colour, when the face and legs were free from œdema, the skin cool, the pulse regular, the urine natural, when moderate hæmorrhagies from the nose gave relief to the head, when eruptions appeared upon the face and body, when the paroxysms had disappeared for two or three weeks, and the patient experienced pleasure in taking food and exercise, convalescence was certain.

In two or three instances only did these protracted fevers terminate in abscess. Twice I saw a hard dark coloured tumour form, extending from the elbow to the wrist followed by a cessation of intermittent. For several days the appearance of these tumours was completely gangrenous, but gradually they suppurated and burst under the joint of the elbow, discharging nearly a pint of pus. During this period the patients were distressed with constant pyrexia, but they entirely recovered without experiencing any return of the intermittent paroxysm.

In warm climates, it is well known, that intermitting and remitting fevers are more fatal than in colder regions. In the former they are apt to destroy by the violence of the symptoms during the paroxysm: in the latter they put an end to life by their obstinacy and perseverance, by the visceral disease and debility they induce. In general, simple intermittents are to be considered as less obstinate and dangerous than those with irregular paroxysms, and short and distinct intervals; but the simplest form of the fever in the troops at Ipswich, induced, by its duration, visceral obstruction, dropsy, and death. By the repetition of the mildest paroxysms, the men's constitutions became shattered, and hectic; dysentery, and every kind of chronic disorder in turn supervened, and wore

out their remaining strength. Though exposed for weeks, to the recurrence of simple fits, they resisted the invasion of unfavourable symptoms, which seldom announced themselves formidably, till disorders of the bowels took place, and the paroxysms assumed a double and confused type. It is the opinion of Wilson, when death happens in intermittent paroxysms, that it is generally in the hot stage. When a quartan destroys life, Sydenham says it is in the cold stage. For my own part, I have known it occur at both these periods, but I have oftener found the men at Ipswich die from debility after the paroxysm has passed over, than during the progress of the fit. If, in the course of some paroxysm of unusual length and violence, the respiration became very laborious and hurried, and continued so, after the abatement of the fit; if the patient lost his voice, swallowed with difficulty, and sunk into a profound coma, or was attacked with muttering, delirium and syncope; he generally expired after the lapse of a few hours, previously to the usual time of invasion of another paroxysm. But however great might be the danger, after the declaration of certain symptoms I have had occasion to detail elsewhere, it never was so imminent as when the original fever became combined with pneumonia or hydrothorax. Even the remedy for pneumonia, in a constitution oppressed with debility, and under the morbid bias which it had acquired from intermittent, was sufficient to induce dropsy, and an increase of the disease of the chylopoietic viscera; so that first from the force of the inflammation, and next from the effects of the remedy, the patient quickly fell a sacrifice to the former, or lingered out a life of misery, for a few weeks, from the consequences of the latter. Neither was the state of the patient much more eligible when the fever became complicated with hepatitis, phrenzy, hemicrania, cholera morbus, or dysentery, with violent pyrexia.

A retrospect of the description I have given of this fever, will shew that it was continually changing from one appearance to another, seldom presenting the same phenomena at its beginning and termination: that various anomalous symptoms attended the paroxysms and their intervals, that new types often characterized the periods, that numerous adventitious disorders invaded, and gave a complicated form to the original fever, and that the repeated paroxysms of the simple, or double tertian description, the subintrant double tertian paroxysms, the quotidian and quartan type, with all their several varieties, uniformly inclined to certain tendencies, which were obstruction and organic alteration of the structure of the chylopoietic viscera, jaundice, and dropsy. In this

this confused and irregular fever, it will moreover be found that no critical days occurred, neither did the paroxysms come to a perfect solution by sweat or urine, but more commonly left a constant pyrexia, with considerable disorder of the functions, till a subsequent fit came on. The interval was thus incomplete, and marked with anomalous appearances; nay, the hot stage might be said to last till the cold stage of another paroxysm occurred. In the same manner did a new fit proceed, but invaded at a different hour, and was accompanied with coma, delirium, fixed pains in the abdomen or chest, diarrhœa, dysentery, lumbago, or some other symptom that had not been noticed before. This paroxysm was followed by another that was anticipating or postponing. Many of the symptoms met with in the last interval disappeared, except coma, which was in general an uniform symptom throughout the disease, from its beginning to its termination. Now the patient experienced an interval of twenty-five or thirty hours; he was attacked with a kind of semitertian, a type that marked a long interval after two paroxysms. I mean, after having had a paroxysm, first mild and then severe, every day, for two or three weeks, he was seized with a paroxysm, say Tuesday morning, which subsided in the course of four or five hours, when another fit occurred in the evening of the same day, terminating the following morning, from which time he had no paroxysm till Thursday evening, thus leaving an interval of twenty-five or thirty hours. Again, the type changed into the double tertian; or sometimes a return of the paroxysm was suspended for a week or longer, when it recurred three or four times without any kind of order, sometimes resembling a quotidian, a simple or double tertian, nay, often in that shape as to make its true type most difficult to ascertain.

When the paroxysm terminated in sweat, or a copious discharge of urine, the patient felt well in the interval, took his food readily, and was capable of exertion; but when no apparent solution of the fit occurred, the skin remained dry, hot, and yellow, or very morbid in colour, the legs and face were œdematous, the respiration restricted, the abdomen tense and very tender, the patient was despondent or comatose, he always felt fatigued, and could scarcely walk a dozen paces without falling. His bowels also were either obstinately confined, or constantly relaxed: the secretions were sparing, and his appetite indifferent. In this state I have known patients attacked every evening about five or six o'clock, with rigors which were followed by thirst, and a burning skin. This kind of hectic exacerbation, at times, appeared to intervene

vene between the paroxysms, or at least to make a distinct disease. In those patients who had sustained great visceral disease, this febrile attack was very evident; and where suppuration had occurred in the spleen, or ulceration in the bowels, rigors, and accessions of fever were of frequent occurrence in the twenty-four hours. The consequences of these hectic exacerbations were evidenced in high irritation, the peevishness of the patient, emaciation of the body, and colliquative stools, so as for a complete state of marasmus to be ultimately produced before the patient sunk under his accumulated sufferings.

Correctly speaking, I believe, the paroxysms of the Walcheren intermittent frequently at last were so confused and blended with hectic exacerbation, that the febrile accessions neither distinctly partook of one or the other: for a time they alternated, but when the patient was fast sinking from visceral disease, he seldom experienced more than severe rigors, succeeded by burning heat, which never so far subsided as to leave a perfect apyrexy. When this was tolerably complete, the patient always had the head-ach, a pain in the small of his back, and at the pit of his stomach, his pulse was tremulous, his abdomen too tender to admit of the slightest pressure, he had no appetite, and involuntarily passed his stools in bed.

SECTION III.

ANALYSIS OF PECULIAR PHENOMENA, AND CONCOMITANT SYMPTOMS.

I am next led to a particular consideration of certain morbid phenomena arising out of the paroxysm, or occurring in the interval, after which I shall make a few observations on the causes and pathology of the disease I have been describing. Though a phenomenon more fallible than some others, singly examined, I shall begin with the pulse. Considered with regard to the criterion this phenomenon afforded in the hot stage, I found that an irregularity of the pulse, combined with softness, was a forerunner of more copious perspiration, than was common to the termination of this fever, and that irregularity, combined with hardness, on the contrary, was always an attendant upon obstruction of the chylopoietic viscera. A pulse that was one time irregular, and at another inter-

intermittent, was for the most part dangerous, especially if the intermission continued in the interval, and was associated with symptoms of a perilous tendency. When a pulse of this description was not symptomatic of organic disease, or of irritation of the stomach, and chylopoietic viscera, it announced great derangement of the nervous system, plethora of the brain, effusion between its meninges, an obstruction to the passage of the blood through the lungs, and hydrothorax and hydro-pericardii. I have known this pulse occur in the more recent periods of the disease, but it was by no means a pulse that was commonly met with in the beginning. In calculating the degree of danger which intermission presents, it is necessary to consider fully the circumstances connected with it, and the symptoms which may have led to it. If, for instance, intermission supervened after a long continuance of intermittent, when the patient's strength was reduced; when there were symptoms indicative of obstruction to the blood's passage through the lungs; when diarrhœa, dysentery, or hæmorrhagies had exhausted the body, the most unfavourable issue might be prognosticated. Intermission of the pulse did not imply particular danger in the early stage of acute disease in the pulmonary organ, neither did it preclude me from recommending evacuations. In the latter stage of these affections, it was the forerunner of death. There was no case in which this modification of the pulse seemed to be so alarming as when it arose from a diminution of the irritability of the fibres of the heart, which was of such frequent occurrence after a long repetition of the paroxysms, after organic disease of the viscera had formed, and, above all, after these complications had induced local or general dropsy. Frequency of the pulse was an attendant upon debility, pyrexia, visceral disease, diarrhœa, and dysentery. All these affections being combined with debility, augmented the irritability of the heart, so that the ventricles were solicited to contract before their cavities became completely distended with blood, thus projecting a small quantity of this fluid into the arteries at each systole, and oftener than usual. A character of hardness, or a pulsation with a shortened jerk, was united to frequency of the pulse, when the force of the paroxysms was directed against the peritonæal lining of the viscera, or against the intestines, or the lungs. This, however, was not invariable, for at the beginning of these inflammatory affections, the pulse was sometimes small and soft. Strictly speaking, a hard pulse was rare in these accidental combinations, and was seldom observed, except at the height of a violent paroxysm of fever. When the lungs partook of that kind of inflammation

which

which converted them into a substance resembling liver, of which I shall hereafter speak, the artery at the wrist offered but little resistance to the finger. On account of the blood meeting with impediments in the pulmonary veins, in its way to the left auricle, as well as from its slow passage through the heart and arteries, there arose a softness of the pulse, expressive of this phenomenon, rather than of the danger the patient was exposed to. If the respiration were laborious in pneumonic affections, the pyrexia high, the countenance flushed, and the pulse soft, there was considerable danger. I have known patients with this kind of pulse die suddenly, which accords with what Baglivi has remarked, and found to happen in pneumonia. Though the pulse were soft throughout the progress of this disease, or only became soft after evacuations, it was not a sign of the patient's recovery unless a gradual diminution of all severe symptoms occurred at the same time. It was very rare to find a full developement of the pulse combined with frequency, in any of the stages or complicated consequences of the fever. A perfect developement of the artery implies great strength of the vascular system, and this seldom existed in persons worn out by the long continuance of disease. As the quantity of blood sent over the body by the heart and arteries was small, in consequence of the existence of venous plethora, and as the action of the blood-vessels was moreover languid in the greater number of patients at Ipswich, a small pulse was by far the most frequent, and indicated the debility with which those were oppressed, who were attacked with diarrhœa, dysentery, hæmorrhagies, and dropsy. A small pulse was also an attendant upon effusion in the bronchiæ, and cellular substance of the lungs, affections which, dissection proved, so often existed: and together with smallness of the pulse in these terminations of the fever there was sometimes intermission. If a bilious vomiting, or diarrhœa supervened from the violence of a paroxysm, or even, if either of these appeared to be idiopathic, the pulse was small and weak, but did not imply the presence of any particular danger. In that modification of intermittent combined with gastric disorders, where the tongue was foul and covered with a yellowish brown coating, the pulse was small and slow. In protracted intermittent which had induced visceral disease, in that modification of the paroxysms that gave a continued form to the fever, and left a constant pyrexia after their violence had passed over, wherein the tongue was black, a muttering delirium, and other symptoms analogous to typhus, a small and slow, or small and quick pulse, uniformly announced the patient's approaching death. A small slow pulse seemed also to precede the invasion of a paroxysm, but which, as this advanced,

advanced, changed to a quick pulse, having a peculiar jerk: this indeed occurs in every case of fever, where the vessels of the surface are constricted, and the blood is driven into the large trunks of the veins. A slowness of the pulse, is probably an indication of the deficiency of nervous influence sent into the fibres of the heart, and may be occasioned by pressure on the brain from the plenitude of the vessels, from the ventricles being surcharged with serosity, or from effusion between the meninges, in short, from a redundance of serum in any part of the encephalon. Where a disordered state of the secretions of the stomach and intestines arose from plethora of the venous system of the abdominal viscera, the small slow pulse may be accounted for, I presume, in the sympathy which exists between the heart and the chylopoietic viscera. It was generally a good sign, if the pulse, from being weak and frequent, became strong, slow and equal, but even this change was not always to be depended upon, nor was it a certain proof of the recovery of the patient. I have repeatedly known this amendment of the pulse occur, while disorder of the functions, and organic mischief were silently going on, as future observations and events proved. When the pulse changed suddenly from this regular order to irregularity, became frequent and intermittent, it invariably indicated latent disease and irritation, and quickly ushered in a train of symptoms and complicated consequences of the fever that but too often foreboded a fatal termination. In this state of the vascular system, diarrhœa, dysentery, inflammation of the spleen, liver, lungs, or brain might be apprehended. A strong slow pulse, changing from strength to weakness, from slowness to quickness, from regularity to irregularity or intermission, was at all times, and in every stage of the paroxysm as in the interval, a most unfavourable omen. If, from this state, it sunk, became oppressed, and did not quickly spring up under the finger when elevated, it was invariably a sign of determination to the head, of plethora of the encephalon. But, on the contrary, if the pulse resisted the finger with energy, and sprang up readily under it, I never found the situation of my patient so critical, although he was plunged into a profound lethargy, or under the exhausting influence of diarrhœa, and severe intermittent paroxysms.

From the state of the pulse I shall proceed to speak of the state of the tongue which was important to be noticed both in, and after the paroxysm. The indications to be drawn from it were these. When the tongue became covered with a thick yellowish coating during pyrexia, and especially if this appearance continued in the interval, and was very conspicuous when the stomach was empty, there was reason to believe that either unusual

usual irritation existed in that organ from debility, that some inflammatory action prevailed on its inner surface, or that bilious matter was contained in it, under any of which circumstances a peculiar treatment seemed necessary, independent of the general plan, for preventing a recurrence of the febrile paroxysm. If this coating became thicker, dryer, and of a darker colour, it marked an increase of the local affection of the stomach. When the tongue was merely white and clammy, and there was an augmentation of the appetite, I generally found that some acrid substances were contained in the stomach that required to be rejected. During the paroxysms of intermittent, the tongue, unless some gastric affection were combined with the fever, was generally white and dry, but when the disease partook of a mixed and continued character, the paroxysms were subintrant, the apyrexies indistinct, and where the abdominal viscera were oppressed with organic disease, the tongue became brown and hard, and if the fever inclined to a fatal tendency, it grew black at the same time that the lips and teeth collected sordes of the same colour. I never saw but one patient recover whose tongue presented this appearance. As the tongue grew harder and blacker, so the danger of the fever increased. In general it was a good sign, if the tongue, after being hard and dry, began to grow moist on the sides, if the coating separated or grew thin, and the gums became clean and bright, yet far from indicating recovery these appearances often only announced a temporary mitigation of the fever, and were frequently succeeded by others which evinced increasing debility, and the imminent danger with which the patient was surrounded. The state of the tongue in advanced stages of intermittent, aided considerably in the formation of a true prognosis, but in earlier stages, it was only a fallacious criterion of the magnitude of the original disease, and of the nature of its complications.

If any dependence could be placed upon external appearances it was upon those afforded by the countenance. Neither the kind of fever, it is true, with which the system w s affected, nor the magnitude of it could be ascertained by the criterion which the countenance afforded, and yet an infallible index of organic disease of the abdominal viscera, silently and secretly subverting the functions, was known to exist in the sallow, wan, and dejected appearance which it so often assumed. Not even the physiognomy of a chlorotic girl, or of a person attacked with jaundice or hectic fever was more characteristic of these several disorders than the yellowish green tint of the complexion was of visceral disease, or the sunk, and dejected countenance, of the hopeless state into which the patient was brought, immediately

mediately by the paroxysms, or indirectly by its consequences. " In morbis autem acutis imprimis quidem ægroti facies sic in considerationem adhibenda : sit ne bene valentium præcipue sui ipsius similis, ita enim optima existimanda. Quæ vero ab eo plurimum recedit, gravissimum periculum portendit." He also says : " Qualis fuerit nasus acutus, oculi concavi, collapsa tempora, aures frigidæ et contractæ, imisque suis fibris inversæ, et totius faciei color ex viridi pallescens, aut etiam niger, aut lividus, aut plumbeus."*

The delirium which was such a frequent attendant upon this fever was seldom a formidable symptom, unless it continued after the paroxysm, or alternated with coma. It was usual for delirium to come on at the approach of a fit, and in the hot stage to produce even phrenzy ; but so long as it merely augmented with the paroxysm, and abated after the sweating stage, there was no danger to be apprehended from it. It was far otherwise, however, if it continued and increased after the fit had subsided, and especially, if, in this interval, the strength gave way, the pulse sunk, and the tongue grew black. If a muttering delirium, alternated with coma, when there were constant pyrexia, hurried respiration, and diarrhœa, or great tenderness of the abdomen, at the same time that the extremities were cold, and the evacuations involuntary, the patient was soon hurried off. When delirium became very severe, and the excitement of the cerebral system was highly increased, acute pains were felt in the head, and there was a wild stare, or redness of the eyes, a state much relieved by the hæmorrhagies of the nose, of such frequent occurrence at the height of the paroxysm. However, I never knew bleeding of the nose to be particularly serviceable in the fever under consideration, except where the pyrexia was continued, and the determination to the head considerable : yet, as long back as the time of Hippocrates and Galen, bleeding at the nose was thought to be serviceable in reducing diseases of the liver and spleen.

In the majority of patients, delirium alternated with coma ; a few of them lost their senses completely, and appeared to be labouring under phrenitis. As the delirium increased, the face flushed, the eyes became glassy, and no rest could be procured : delirium was always worse at night, and during the hot stage of the paroxysm. Sometimes the patient vociferated loudly, but more commonly his voice was low, his countenance dejected, and his pulse small and rapid. In this state a red circle frequently occupied the centre of each cheek, the

* Hippocrates.

eyelids were half closed, and the tongue and teeth covered with dark sordes. That inflammation frequently occurred in the encephalon and its meninges, was evidenced in appearances upon dissection. The turgid state of all the vessels, the serous exudations, and the layers of coagulable lymph between the meninges were all proofs of inflammation and determination to the head. Besides, during life, the distention of the jugular veins evidenced the difficult return of blood from the encephalon to the heart, the existence of venous plethora, whence arose that transudation of fluid which imparted softness to the brain, and which occasioned those collections of serum found upon dissection within the ventricles, or between the meninges. This dropsical state of the encephalon appeared to be the result of some change which the substance of the viscus had experienced, in the same way as ascites was the consequence of disease of the spleen and liver.

The comatose, nay almost apoplectic state of a great number of the patients under the influence of recent disease reminded me of the remarkable ague of 1578, that was ushered in, as Sydenham tells us, with apoplectic symptoms. He mentions an oppression of the pulse, dilatation of the pupil, and abolition of the senses, as characteristic of it. I have said that the approach of the paroxysm was often preceded by intense coma, and accompanied with delirium before, or at the height of it, a state which may be considered as truly characteristic of the protracted fever of Walcheren. This symptom appeared to have its source in a want of nervous influence sufficient to keep up the organ of sensibility in a due state of excitement. When excessive, it was a formidable symptom implying a deficiency of nervous power, constituting what Dr. Cullen has termed collapse of the brain. It is nevertheless true that coma was caused by venous plethora, and by effusion between the meninges of the brain, and in the ventricles.

Independent of the fixed and wandering pains arising from a general cause incident to the different stages of the intermittent paroxysm I have before detailed, there were many local affections when the fever was protracted, that were the source of irritation and pains, of different degrees of severity. The head was frequently subject to severe pain, and paid very dear for possessing the advantage of holding the organ of feeling. In chronic delirium the pain was heavy and dull, sharp and pungent when the meninges of the brain were inflamed, acute and pulsative in violent delirium during the hot stage of the paroxysm, sharp and convulsive in organic disease of the intestines, the liver, or the peritoneal covering of the viscera. The primary irritation induced by the

the fever on the viscera of the abdomen occasioned in them a pain, which, in itself a strong irritant, repeated by a reflected operation the sharp sentiment which characterizes it to the remotest part of the body, and thus kept up the most exhausting irritation and sufferings. In the spleen, pains were frequently felt symptomatic of weight and tension, the result of slow inflammation; and of a hot throbbing kind, characteristic of suppuration, at the same time creating constant pyrexia and sympathetic pains of the head, stomach, back and loins. Pain in the head, and delirium, frequently appeared to be symptomatic of congestion in the spleen or liver, and of distension of the gall bladder. Galen says that pains from these causes generally attack the anterior part of the head. When once the head partook of the affection of the viscera, nausea, loss of appetite, and derangement of all the functions soon succeeded. In the spleen indeed, which is not endowed with acute sensibility, disease was concealed under the fallacious sensations of slight titillation, partaking of dull pain; but when suppuration began to take place, then for the most part, strong action ensued, hardness, heat, soreness, and all the phenomena attendant upon inflammation. In the same manner did organic disease of the liver, intestines, and mesenteric glands, commence. In proportion as the liver however sustained further congestion, pain supplied the sensation of itching and soreness in the right hypochondrium, spread itself to the shoulder and induced pyrexia and bilious vomiting: while excessive congestion of the spleen was characterized by pain in the breasts; and disorder of the mesenteric glands, by pains in the thighs and knees, emaciation, tenderness of the abdomen, and uneasiness in the lumbar region. Pain seldom long continued local, for when it was developed in any part of the body in consequence of disorder in the functions, or change of structure in the organs, it was transmitted by the nervous fibrils with the rapidity of lightning to the most remote parts of the frame. As the centre of sensibility then, the brain ought to be principally affected, and this accordingly was found to be the case in one or other period of the disease. While the pain was moderate and confined to organs endowed with little sensibility, the brain did not partake of the irritation, but when it became severe, disturbed sleep, intense head-ach, delirium, pyrexia and vomiting were the constant attendants. Previously however to the loss of reason the sick man felt hope and sleep abandon him. Of but little avail are anodynes now in procuring him a respite from his sufferings; cold sweats cover the body, coldness of the extremities, universal perturbation

turbation succeed, no posture relieves him, his pulse sinks and death hastens to close the scene!

The occasional pains of the head, of the vascular system during the hot stage of the paroxysm, of the intestines, and other abdominal viscera, though not severe, kept up a perpetual irritation of the system that contributed irrecoverably to wear away the patient's strength. If it were not so acute, it was at least more durable, but, fortunately for the sufferer, now and then marked by intervals of repose. Thus the alarms of the sick were dispelled for moments, and the idea of danger removed; nevertheless, by its slow and even occasional operation, it added obstinacy and embarrassment to the constitutional disease, I mean, fever, and frequently modified it by some new character. When the mind gave way to the pressure of pain, was torn by bitter recollections, and a cruel prospect in future; when it lost the constancy that always strengthens our courage, the patience that supports us, the hope that consoles us; then pain was a poison against which art could not avail, and death was anxiously wished for as the sufferer's last resource.

In general the vomitings which preceded and accompanied the paroxysms were not alarming. They for the most part abated when the bile contained in the stomach was rejected from it. If the quantity of bilious matter in this organ was considerable, its presence occasioned pain in the head, oppression at the præcordia, coldness of the extremities, a small irregular pulse, nausea, and agitation of the lips. If a green, black bile, or bile like verdigrease were thrown up abundantly after a long duration of intermittent, especially if there were constant pyrexia, and great exhaustion of strength, it portended ill. I am far from meaning to insinuate that vomitings of green viscid bile were uniformly dangerous, for these, we know, repeatedly occur from nervous disorder, or a mere increase of the biliary secretion without constitutional disease. Where the stomach had become debilitated, a rejection of glairy fluid was very common, and implied no derangement of consequence.

There is reason to suppose if the urine be pale when nothing disturbs the vascular and nervous system, that the blood is thin and poor, and that a general relaxation of the solids exists. Turbid urine in the interval of the fever was common in the men at Ipswich, and symptomatic of the want of energy of the chylopoietic viscera, perhaps of the altered condition of the bile and other digestive juices. Where the primæ viæ were debilitated and surcharged with glairy fluids, I have observed the surface of the urine to have a thin pellicle,

pellicle, upon which floated numerous particles of oil. This appearance generally occurred in the worst cases, and where hectic prevailed. Hippocrates considered this urine of very bad omen. "Quinetiam pinguedines supra innatantes, aranearum telas referentes, damnare oportet, colliquationem nempe significant." For the most part the urine was pale and small in quantity: sometimes reddish depositing a lateritious sediment, rarely a white sediment such as Mascagni declares to be of favourable omen in all febrile disorders. In the sick at Ipswich, this white sediment announced debility of the chylopoietic viscera, complication of disease, weakness of the whole system, and was never a sign of the fever declining, or coming to a perfect solution. In by far the greater number of cases the urine was high coloured during the paroxysm and in the interval. In patients who had become dropsical, or whose constitutions were worn out by hectic or the duration of intermittent, the urine was of a deep red colour: and in those who had the hepatic function greatly disordered, the urine was of a yellow colour. Bloody water was voided at different periods, preceded by pain in the loins, at the neck of the bladder, and the glans penis.

The weakness attendant upon the fever was at all times one of the most formidable symptoms, and was sometimes so great as to produce syncope, or to occasion the patient to drop suddenly down. It has been so great as for the vital powers to be incapable of exciting the paroxysm with its usual force; instead of shivering, a patient sometimes merely experienced a protracted rigor. It appeared to be owing to extreme debility, to an oppressio virium, that the paroxysm seldom came to a perfect termination, and that death occurred, in some instances, at the invasion of the cold stage.

As I have elsewhere said that pyrexia was an almost uniform symptom in the sick, it will be conceived that the skin rarely possessed its usual softness and moisture. In the interval of intermittent, as in many chronic complaints, nervous disorders, and affections of the liver, the skin acquires a peculiar dry and rough sensation. A general dryness of the skin was indicative of disorder in the functions, and always present where organic disease existed. The heat and dryness of the forehead, cheeks, palms of the hands and soles of the feet announced the hectic tendency, and that some local affection was combined with the fever. A frequent alternation of heat and chilliness of the skin was met with in suppuration of the spleen, ulceration of the bowels or mesenteric glands. I have already observed that with respect to colour of the skin, particularly of the face, some information was to be obtained in forming a prognosis. A yellowish green tint denoted organic disease:

disease: a livid hue announced languor of the capillary vessels, and was often a forerunner of death.

As the spleen is that organ of the body which is the most vascular, it will necessarily when diseased become the centre of a considerable determination of blood. Cælius Aurelianus maintains that the liver experiences congestion from a similar cause, and occasions the same effects upon the constitution as a disorder of the spleen. The dropsy and jaundice are their common consequences, with this difference, however, with regard to the skin, that its colour partakes more of a leaden hue in diseases of the spleen. "Qui vero aliene sunt tum hydropes, tum morbi regii nigriores sunt." Hippocrates moreover adds "quicunque splenici a dysenteriâ corripiuntur, his longa accedente dysenteriâ, aut hydrops accedit, aut intestinorum lævitas, et perèunt."

In no instance when blood was drawn away did it seem to contain a superabundance of serum: neither was it loose or of a dissolved and black consistence as in malignant fevers or scurvy. The colour of the blood was of the usual blackness: the crassamentum firm and glutinous. In general the serum bore a very small proportion to the crassamentum, and was of a yellow tint.

The force of the paroxysm has sometimes appeared to be directed to the bowels, occasioning them to act with frequency and pain. When the stools were few, the intestinal surfaces became exposed to the action of acrid matters, and of course from their retention were more susceptible of inflammation, of which there were many instances when the bile, by its viscid altered quality ceased to excite the intestines to the performance of their natural functions. I believe however that constipation often arose from a want of irritability in the fibres of the large intestines occasioned by the torpor of the whole system, but oftener from the bile not finding its way in proper quantities into the duodenum. As the colour of the excrements depends in great measure on the bile, they must of course have a very different appearance when this fluid is either not mixed with them, or is only blended in small proportions. If the stools are of a dark olive colour they indicate the presence of much bile, and that the chylopoietic viscera possess considerable energy. The green evacuations proceeded from acidities in the primæ viæ, and debility of the organs of digestion. I have known blood come away in coagulated lumps without the least pain, from the rupture of one or too vessels in the large or small intestines. It has sometimes been considerable in quantity, and occasionally accompanied with pyrexia and deliquium animi. But no evacuations

cuations were so symptomatic of extensive disease of the bowels, or of the alarming tendencies of the paroxysms, and their consequences, as those of a fœtid quality, and which were black, and variable in colour. If the pulse sunk, the strength diminished, and such evacuations became frequent, the patient's recovery was very doubtful. The aphorism of Hippocrates was very applicable here, "quibuscunque per morbos acutos vel diuturnos, aut vulnera, aut quovis alio modo extenuatos, atrabiles, aut veluti sanguis niger per inferiora subsederint, postridie moriuntur." A purging of substances resembling *Lotura carnium*, coming on, after a violent paroxysm, or particular pain of the liver, reminded me of the hepatic flux of the ancients. It was always dangerous, and attended with extreme prostration of strength. "Malum vero ventris," observes Hippocrates, "valde rubens profluvium eoque magis si hepatis vitio ut in hepaticis fit, tales dijiciuntur." The grey, clay coloured evacuation was very common when the disease of the viscera had become confirmed, and especially when the liver was much disordered; and a relaxation of the vessels which furnish the intestinal secretions was evidenced in the watery stools which so frequently were a sequel of repeated paroxysms. If these evacuations were combined with a white tenacious substance, marasmus rapidly advanced: they did not occur in the early stages of the disease, but were frequent towards the fatal tendency of the fever, and when the mesenteric glands were obstructed. The evacuations of a solid and liquid description equally preceded dysentery, and often announced the presence of scybala in the colon, with irritation, or passive inflammation of the intestines that terminated in the production of tubercles. For the most part the torpor of the nervous system was a principal cause of the irregularity and languor of the intestinal canal, for a freedom and energy of the nerves seem always to produce a regular exercise of the functions of the alimentary canal. The effect of this torpor was evident both in the stomach and intestines at different periods of the fever.

The bile was very variable both in quality and quantity in the progress of this disease and its consequences. It was sometimes so abundant as to keep up, by its presence in the primæ viæ, a constant nausea, and to solicit the stomach to reject it at every return of the paroxysm; while at other times the patient would not throw up bile for weeks together, nor would the stools be impregnated with a proper quantity of it. I have known the bilious fluid to possess such acrid properties, as almost like a poison, to inflame and corrode the coats of the intestines. This, however, was not common, but it has been repeatedly

repeatedly observed in earlier stages of the disease, and Spigelius dwells particularly upon it in his treatise "De Semitertiana." Sir John Pringle observes, although bile be not the primary cause of these fevers, yet its depravity and too great abundance, become a secondary cause of much mischief, occasioning them to continue, and in some measure to retain the denomination of bilious, a name indeed given them by Sir John and several other authors. In two subjects that were opened, the bile was so acrid as to leave a large spot on the scalpel similar to what happens when sulphuric acid is poured upon iron.

Remitting and intermitting fevers appear to direct much of their action against the liver. In the beginning of these disorders there are always copious and vitiated secretions of the bile evidenced in the quantity of this animal fluid rejected by stool or vomiting. I have observed that a repetition of the paroxysms of intermittent, determined a morbid action of the viscera, chiefly of the abdomen, subverted the harmony of the functions, and at length produced organic alteration of the parts, against which the force of the fever seemed to be most directed. There are certain consequences resulting from the influence of certain diseases, which the practitioner knowing, is able not only to ascertain but to avert; such, for instance, is the œdema which succeeds hæmorrhagies, palsy of the tongue following apoplexy, amaurosis and tinnitus aurium occurring after inflammation of the brain or coma, and peripneumony arising after angina. But the changes which occur in a state of disease in the animal economy, as we have daily opportunities of observing, are not confined to those of an acute class, the only difference between the tendencies in acute and chronic complaints consisting in the rapidity with which they occur in one, and the slowness that marks their establishment in another. Witness, for instance, the swelling of the parotid glands, the bubos, enlargement of the tonsils, and the gangrenous kind of erysipelas which supervene on fevers, forming a number of particular and secondary affections or consequences of more or less severity. If, however, instead of high vascular action as in fevers, the heart and arteries are languid, and if, instead of acute constitutional disease, congestion of the viscera has produced a chronic disorder, more of a local than a general nature, the first affection is frequently overlooked in the second; as for example, in the dropsy succeeding disease of the liver, and in the atrophy which follows rickets.

It is indeed more likely for the consequences of fever to manifest themselves in the viscera that have been most disordered by the violence of its action, and that have become much weakened, than in others. They most commonly occur in parts

parts primarily affected, as in the liver and spleen, in intermittent; in the epilepsy to which children are exposed who have had an inflammation of the brain; in the chronic pains of the chest, where pnuemonia has occurred; in the palpitations of the heart proceeding from strong convulsions; in numerous visceral obstructions induced by fever, and in tympanites which takes place in jaundice. I have sometimes thought the tendencies in intermittent were encouraged by the weakness of the animal fibre, the peculiarity of function the organ had to perform, the quantity of blood passing in it, and the organization of the viscus itself. The tone of the fibre in soldiers is in general great, and hence the violence of the disease with which they are attacked, and its serious complications and varieties; the two latter so essentially depending in this class of men, upon the influence of air, aliment, and exercise, as well as upon the manner in which medicines have operated that have been given to fulfil some particular indication. By the operation of these several powers, the type of a disease will be totally changed, as Sydenham has justly observed, yet under certain circumstances the general character nevertheless be preserved. I do not intend to dilate upon this part of my subject, or I might be much forwarded in my design by quoting the examples handed down to us by Sydenham on the modifications of disease produced by heat and cold, and the succession of the seasons.

Dissection has shewn that the organs primarily affected in intermittent are the liver and the spleen. In subjects who expired of this disease, even in its early stage, these viscera have always appeared to be materially altered in their structure. Sometimes the intestines have been found inflamed and gangrenous, the mesentery and omentum of a dark colour.* I am not aware, however, of an enlargement of the spleen having produced much secondary disease till it had acquired the magnitude of two, three, four, or five pounds, and had suppurated or become ulcerated in particular parts. I have, however, little idea that it, or even other viscera, were ever the cause

* "I have examined the bodies of near an hundred persons, who perished in these fevers, and constantly found one or other of the adipose parts in the lower belly (the cawl, mesentery, colon, &c.) of a dark black complexion, or totally corrupted. The vesica fellea full and turgid, and the stomach and intestines overflowing with bilious matter: the spleen larger, sometimes weighing four or five pounds, and so excessively soft and rotten, that it had more the appearance of congealed blood wrapt up in a membrane, than of an organical part. In the cavity of the head and breast, nothing extraordinary was met with, excepting yellow serum, when the skin was tinged with the same colour." Cleghorn's Epidemical Diseases of Minorca, page 180.

cause of primary fever. The spleen has been found very large when the patient did not even feel pain on pressing the left hypochondrium with the hand. This organ seldom alone bore marks of disease. The liver was generally large, and of a dark purple colour at the same time; the gall bladder was distended with dark viscid bile, and sometimes ulcerated on its inner surface. Where these viscera remained diseased after the cessation of the paroxysms, or where they continued to sustain further morbid changes in the interval of the fits, it was announced by hectic exacerbations, a cachectic appearance of the body, hardness and tension of the abdomen, debility, disorder of the bowels, headach, and anorexia. I thought I could in particular perceive a diagnosis of disease of the spleen, in the leaden, green, and bloated appearance of the face, the debility and listlessness of the whole body, as well as in the accessions of fever, which were then truly hectic, and recurred every evening about five or six o'clock. Before the disease acquired such a height in this organ as to be evident to the touch, the liver, mesentery, and pancreas had all generally undergone some change in structure, and the secretions of all the chylopoietic viscera had of course become much diminished and vitiated. There was seldom the same tenderness on pressure in the right hypochondrium as in the left; neither were the visible effects of the disease so remarkable on dissection in the liver as in the spleen. Nevertheless that viscus also had always experienced some alteration in structure, but I seldom knew it to become schirrous, and never to have suppurated. To the visceral obstructions I have named, succeeded passive inflammation of the bowels, dysentery, and dropsy. I cannot help thinking that the anasarcous state of the substance of the lungs, and hydrothorax, were to be as much considered consequences of intermittent as ascites and anasarca. A great many dysenteric patients were attacked with rheumatism, a complaint which at times appeared to me to alternate with dysentery.*

* Diarrhœa and dysentery, if I may be permitted to speak of them in these terms, resembled morbid graftings upon the original disease. These disorders were similar in the succession of their appearance to what de Haen experienced upon other occasions. A little girl, he says, had a peripneumony, which being left to its own course, suppurated on the 10th day. At that period, slight efflorescences appeared on the face, exactly resembling scarlatina. Four days afterwards the fever became very severe, and was attended with dysentery and a copious eruption of scarlet fever, in the middle of which there were little elevations resembling millet seeds. The following day the fifth disease came on, which was the small pox. Pustules regularly formed, appeared upon the neck, arms, and face, but the child fell a victim to these complicated affections.

All

All the important consequences then, entailed by protracted intermittent, comprehended enlargement of the liver and spleen, wasting of the omentum, inflammation of the peritoneal covering of the viscera, extensive adhesions of the abdominal viscera to each other, schirrosity of the pancreas, enlargement of the mesenteric glands, inflammation, ulceration, and gangrene of the intestines, ascites, anasarca, hydrothorax, dropsy of the brain, jaundice, and dysentery. The chief disorders combined with intermittent were pneumonia and angina. I have known pneumonia to be repeatedly combined with simple and double tertian paroxysms, and in Chapman's Medical Commentaries there is a corroboration of pulmonary complaints assuming an intermittent type. Though it is a fact that autumnal intermittents are apt to run into dysentery, and vernal intermittents to attack the lungs, yet one of the most frequent combinations in the protracted fever of Walcheren was inflammation of the lungs, an affection that became very frequent in November, and that generally ended fatally. While I was speaking of the consequences of intermittent, I should have included a severe lumbar pain with which patients were so much afflicted as to oblige them to remain in bed, and to seek particular remedies for its relief. Sydenham has met with similar pains, but he never found it necessary to prescribe separate medicines for it. Sometimes the neck of the bladder has been spasmodically contracted, and partial suppressions of urine have succeeded. Erysipelas has now and then appeared, but whether this was to be considered as an accidental combination with the fever, or a consequence of it, I am not prepared to say; all I can add is, that the ague disappeared after its invasion. I have now detailed most of the symptoms, appearances, combinations, and terminations of the Walcheren intermittent fever, and may add with the ingenious Le Roy, that on their succession and the degree of their severity the prognosis depended. "C'est ce que démontre, la succession des symptômes que présentent les maladies quand elles se terminent par la mort. Dans quelques-unes, c'est un delire phrénétique, dans d'autres, une affection soporeuse; quelquefois des convulsions epileptiques qui charactérisent la facheuse influence de la maladie sur le cerveau ou ses méninges, un point de coté tres douloureux, une grande difficulté de respirer, annonceront son influence sur les poumons ou sur la plévre: un météorisme excessif du bas-ventre, un tumeur sensible et douloureuse, survenue dans telle ou telle partie de cette cavité, marqueront, dans d'autres cas, les funestes effets de la maladie sur un ou plusieurs viscéres du bas-ventre. L'ouverture des cadavres, en confirmant la théorie sur les causes extérieurs des nouveaux symptômes

démontre

démontre leur connexion avec les affections intérieures, qù elles indiquent; elle prouve de plus combien il est rare qu'un homme succombe á une fiévre aïgue, par exemple, sans que l'ouverture de son cadavre ne manifeste la funeste impression que la maladie avait portée sur telle ou telle partie intérieure où elle avait produit, soit un engoisement, soit une inflammation, un abcés, la gangrène, des pustules purulentes, des taches gangreneuses; enfin, quelquefois un epanchement dans ún des trois cavités."

The slighter derangements of the chylopoietic viscera were observable, when the interval was sufficiently distinct, in a distension of the stomach after taking food, tenderness of the epigastric region, a limited expansion of the chest in the act of respiration, wandering pains about the navel, irregularity of the alvine discharge, and an unnatural state of all the secretions, the consequence of high irritation, or perhaps venous plethora, which dissection proved was of uniform existence in every stage of intermittent. But these gradually were lost in the more urgent sensations arising from obstruction of the viscera, and the pyrexia and pain occasioned by the slow inflammatory action which the several viscera of the abdomen sustained in the progress of the fever, until the symptoms arising from the secondary disease became the most alarming, and more directly menaced the patient's life. Sometimes the changes were slow, and protracted a miserable existence for months, at other times they were rapid, and quickly carried off the patient. The symptoms arising from the first cause, however, frequently subsided where a recurrence of the paroxysms was prevented, and even those which proceeded from organic disease often yielded to purgatives and a slight mercurial course. But occasional returns of the fit never failed to give origin to all the consequences I have elsewhere spoken of. Sir John Pringle in his Account of the bilious remitting and intermitting Fevers of the Netherlands, remarks, "Frequent relapses brought on visceral obstructions, which made the intermittents more obstinate and irregular, and terminate in a dropsy or jaundice. In this bad state of the viscera, a hard tumour was frequently felt on the left side of the belly, lower than the false ribs, called by the common men the ague-cake. But as none of those who died with this tumour were opened, the part affected could not be ascertained. I conjectured it to be the spleen. It was often accompanied with swelled legs, a distension of the whole belly, or with some other dropsical symptom; and whilst it remained, the fits could not be safely stopped by the bark. It was a bad but not a mortal sign, since many who had it recovered."

"I likewise met with a few cases of the tympanites, a distemper

temper which I suspected to be chiefly owing to a premature use of the bark before proper evacuations. But as to other obstructions, and in particular those which brought on ascites, I observed that they happened as often without, as with the bark, and therefore seemed generally to depend on the long continuance and obstinacy of the intermittent."

But before I proceed to speak of the pathology of intermittent, I shall just remark, that when extensive visceral disease had taken place, then the paroxysms still continued to recur at times in the several forms and types described in the beginning of this paper, only that they most frequently assumed that of the double tertian. In the early part of the winter, let me again hint, that their types were very confused, and the paroxysms long, and that they were frequently combined with a disordered state of the stomach, which is so common an affection in autumnal diseases. The appearances and symptoms which verify this assertion were a white and yellow cast of the tongue, a sensation of heat at the region of the stomach, distension of the epigastric region, acid eructations, nausea, anorexia, and frequent inclinations to vomit. I presume this affection was not to be more referred to the consequences of intermittent fever, than to the atmosphere and the season of the year; for it was often most troublesome when the paroxysms had disappeared for two or three weeks, and most prevalent at the period I have mentioned. Nevertheless it contributed to modify and break in upon the regular phenomena of the fever, and to characterize it by some feature it was not marked with before. As the season advanced, the type experienced further modifications, and was distinguished by combinations different to what had hitherto appeared, but all denoting an inflammatory state of the fibre. During winter, the skin, we know, is locked up, and acts with greater energy, forcing into the cavities and large vessels a greater quantity of blood. In spring, the actions of nature take place in an opposite direction, and determine the fluids to the surface and not to the centre; hence peculiar deviations from the usual order of the phenomena of disease will occur corresponding with the changes of the season, and the state of the system in them. "In constantibus temporibus, si tempestiva tempestivé reddantur."* "In different seasons, therefore, the paroxysms will even personate other complaints as well as modify their type, nay be even in reality combined with particular affections, bilious, inflammatory, or malignant, arising from natural causes, as it were operating upon and influencing the constitution of man. The seasons, therefore, of the

* Hippocrates.

the year, the variations of the atmosphere, the idiosyncracies of constitution, and the tendencies to which intermittent always pointed, combined to render the fever, as it appeared at Ipswich, confused, anomalous, and extremely irregular.

SECTION IV.

PATHOLOGICAL VIEW OF MORBID PHENOMENA.

Whatever may be the age and constitution of the patient, season of the year, or climate, it is pretty evident when paroxysms of intermittent invade, that they are always preceded by extreme debility. All the first symptoms of the fever indicate the presence of atony, a want of something necessary to muscular motion. A general relaxation is extended to all the voluntary muscles, and the energy of the nervous system is weakened. The brain and nerves are evidently impaired in their energy, and do not appear to convey the power of motion to parts under the influence and dominion of the will. It is not our business here to enquire into all the causes of such derangement; we may suppose it fatigue, or exposure to cold and the influence of certain deleterious agents, the operation of which is followed by an increase of action in the heart, and an augmentation of velocity in the blood's motion through the arteries, determining blood hastily, and in larger quantities than natural into the veins. These, both on account of the yielding structure of their coats, and of the ease with which the surrounding muscles give way when pressed, readily expand to the increasing impetus of the blood which is newly driven into them, so as for plethora and congestion of this system of vessels to ensue. This state of the veins, I presume, occurs over the whole body, but of course is, cæteris paribus, more easily established in the mesenteric veins and the vena portarum, where the blood is not so well pushed through them by the action of the surrounding parts as in more external situations of the body. As soon as some injurious agent produces peculiar effects upon the nervous system, this inequality in the circulation ensues, and continues to augment as the paroxysm approaches: nay perseveres after it has passed over, just in the same way as plethora of this system of vessels is found to exist where the body is exempt from disease, and the head and arteries merely under the influence of passions of the mind, or agitated by muscular exertion. Of course, when there is a real obstruction

to

to a return of the blood through the venous system of the abdomen, as I have found by dissection to be always the case in this protracted fever, the plethora of the veins reaches its maximum. But dissection has shewn, that not only the veins of the abdominal viscera, but even the whole venous system, the two venæ cavæ, and the right auricle of the heart have partaken of the same distension and the same dilatation. Moreover, the impeded return of blood to the heart is manifested in the livid look of the countenance and extremities, in the heaviness felt in the head and coma, in the uneasiness of the abdominal viscera, and in the turgescence of the mesenteric vessels creating pain in the lumbar region. That venous phethora seems to have its origin in diminished nervous energy, is rendered probable by the dejection of spirits, the loss of muscular power, and the general debility which attend this fever in all its stages : also by the tendency there is in certain parts to be attacked with spasm when this disease inclines to a fatal termination. Such appears to me to be the cause of congestion in those organs whose vascular system is almost wholly venous, and in which the circulation is naturally slow, and liable to interruption. A further illustration of the presence of venous plethora is manifested, as I think, in the severe headach that so frequently occurs in the course of intermittent, in the pain that extends along the spine to the thighs, in the hurried and unequal respiration, in the oppression at the præcordia, the smallness of the pulse, and the diminished activity of the absorbent system. Hence in a certain order, arose congestions of the spleen, liver, and brain, all of which in turn yielded to drastic purges, and to the external and internal exhibition of mercury, another proof in my opinion, of the symptoms I have just detailed, depending upon plethora of the veins. Is it not probable that the œdema of the legs and face depend upon the pressure of the blood contained in the venous system? A common effect of an impeded return of the blood to the heart, is a distension and œdema of the part beneath the obstruction, as is proved in the application of a ligature to a limb. Hence therefore œdema may in the case in point be attributed with greater propriety to the pressure of the column of blood in the veins, than to debility of the absorbent system. Might not then these troublesome sequels of intermittent, and the symptoms indicative of venous plethora be effectually averted by drawing off blood in the early periods of the fever? If it be to venous plethora, that obstructions of the liver, spleen, and other chylopoietic viscera are referable, nay, diarrhœa and dysentery, would it not be sound practice to take away blood while the action of the heart and arteries is yet strong, in order to prevent

vent congestion from ensuing? I am aware that while debility and torpor of the system existed, accumulation might take place from debility of this system of vessels, and disease of the viscera be kept up by the opposite cause; but in order to combat this, appropriate remedies must be had recourse to, and such a consequence always retained in view by the practitioner. Where the right auricle of the heart was oppressed with a large column of blood, it might be expected that its coats would thicken, become inflamed, and produce violent palpitations, but this I believe was never the case, for the auricle lost its power by the increase of resistance, grew less irritable, and became dilated nearly one third of its capacity. The same thing happened in the two venæ cavæ, whose diameter became much enlarged. I have no doubt of this plethora of the veins giving rise to congestions of the spleen and liver, and even to those passive inflammations of the intestines which engendered diarrhœas and dysenteries of such an unmanageable description, and therefore presume that bleeding *in the early stages of the fever, and where the strength would not be endangered by it*, would be proper, and by the same rule a hurtful remedy in long standing diseases, where plethora of the venous system is evidently the result of torpor, debility, and obstruction. The return of the blood through the veins of the abdominal viscera is slow at all periods of the fever, and still more so when it has been of long standing, as dissections conducted in its different stages have induced me to believe. To relieve the venous plethora is a great desideratum, both to prevent congestion, and the consequent effusions which occur in the large cavities. Is not the torpor which is experienced at the approach of the paroxysm, partly occasioned by an accumulation of blood in the venous system? Or, if this depends upon the atony of the nerves, is not the subsequent paroxysm rendered more violent by it, and the removal of the disease made altogether more obstinate? It is impossible while this exists, for the arterial system, did it possess greater energy than it is observed to do, to drive the blood forward in the veins, or even to distribute that quantity of blood over the system that will make the circulation equal and uniform. By what means then ought we to attempt to remove the torpor, and to restore the circulation at the approach of the fit? It may be urged, that if the action of the system be excited by diffusible stimuli, and the fibres strengthened, the circulation through the veins will necessarily follow; that congestion in the veins is a mere consequence of general debility, and will be obviated by invigorating the system. To this mode of looking at the disease I assent in many instances, but I have to add, that I have repeatedly failed

failed in rendering the paroxysm mild, and in diminishing torpor, by employing stimuli alone, and trusting to their restoring the circulation. But if, on the contrary, venous plethora has been removed by a drastic purge, for local bleedings I had not an opportunity to practice, and diffusible stimuli administered afterwards, at the invasion of the fit, the symptoms were both less violent and shorter. It strikes me as being injudicious to throw in powerful stimuli, while congestion and organic disease, perhaps combined, though not evidently so, with inflammatory action, exist; until the venous plethora giving rise to them, or at least keeping them up, be first removed by evacuations, such as those procured by stools, or cupping glasses applied near the diseased part. Venous plethora does not only appear to exist as a consequence of debility and diminished nervous energy in the first instance, but to be augmented afterwards by the interrupted state of the circulation during the paroxysm, and thereby to produce many of the symptoms peculiar to it. To begin with the head, it is notorious that the face becomes bloated, and even swelled near the parotid glands in consequence of the plethora of the jugular veins, and that intense coma resembling apoplexy, referable to plethora of the sinuses, by which means a certain pressure is made upon the brain, is superinduced. That this state of the venous system does exist in the brain, is shewn in the dropsical texture of this organ, and in the effusion into the ventricles. If this were considerable, while the momentum of the blood through the arteries was great, both were relieved in the hæmorrhagies which took place from the nose. When plethora of the veins was very urgent in the intestinal canal, it was removed in the same manner by hæmorrhagies from the rectum, an appearance often mistaken for dysenteric evacuations. The anxiety and languor attending different stages of the fever were to be accounted for in the regurgitation and return of the blood into the large vessels; the coldness of the body to the weakened state of the respiration, and to the irregularity and want of energy of the circulation, as is observed in palsy. Thus it was that patients complained of cold, when upon touching them with the hand, the skin felt quite warm. We may look for the cause of tremor in the diminution and irregular distribution of the nervous energy, and account further for this phenomenon, which bears so strong an analogy to spasm, in the debility that prevails in the system at its invasion. The hurried and interrupted breathing may be attributed in part to the difficult passage of the blood through the pulmonary vessels, and probably also to some particular state of the intercostal muscles, and diaphragm, which is not very evident to our senses. I believe the hot stage of in-

termittent may in great measure be assigned to the previous congestion of the large vessels, at length acting as a stimulus to them, and throwing them into high action. Another cause of the difficulty in breathing may be found in the imperfect oxygenization of the blood, as the experiments of Girtanner prove, who, injecting oxygen gas into the veins of a dog while he was panting for breath, the animal's breathing became tranquil the instant the oxygen found its way into the system. The cough which is often so troublesome in the cold stage, and accompanied with a considerable secretion in the mucous membrane of the bronchiæ, may have its origin in a sympathetic affection of the lungs, transmitted from the skin while in a state of rigidity and constriction. The secretion at the time may find its explanation in an increase of exhalation into the bronchial tubes from plethora of the pulmonary system. The pulse will necessarily be small, weak, and irregular in the cold stage, from the debility of the fibres of the heart and arteries, and the general weakness of the system, and strong in the hot stage from increased action. The heart frequently grew torpid and insensible as debility augmented in the progress of the disease, and the pulse of course became marked with a peculiarly feeble stroke. When the contractions of the heart were weak and frequent, a common consequence of debility, then the feeble pulse became combined with frequency, and suddenness of jerk.

Plethora of the vena portarum occasioned large and vitiated secretions of bile, which I have elsewhere mentioned irritated the stomach, and sometimes excoriated the intestines. The yellow suffusion which occasionally appeared over the body was the natural consequences of the bile being obstructed in its passage through the ducts, and carried over the system as we repeatedly observe to happen in affections of the liver. The want of appetite that was so frequent a symptom in the interval, particularly after a long duration of the fever, was attributable to the loss of the contractile power of the fibres of the stomach, to a diminution of the gastric fluid, and its disordered condition: while the dryness of the mouth and tongue probably arose from the weak and irritable state of the stomach, or from a sympathetic action imparted from the skin, which was almost always morbidly affected, to the secretory lining of the tongue and fauces. The sympathetic connexion to which I allude between the vessels of the surface, and the mouth and stomach, was better exemplified in the presence of nausea, which frequently contributed to diminish the force of the cold fit, and, I presume, by its withdrawing the constriction of the cutaneous vessels through the medium of that consent

sent which is known to exist between the centre of the frame and the surface. Upon this principle of sympathy, I conceive, vomiting proves useful in removing the constriction of the surface. A very common consequence succeeding the hot stage was diarrhœa, which appeared to be produced by some new determination to the mesenteric vessels occasioning a sudden increase of the intestinal secretions, which, before this event occurred, were diminished from the general torpor of the body, or perhaps vitiated in consequence of the chronic inflammation that had attacked the inner surface of the bowels. The abolition, or at least diminished activity, of the internal senses, so remarkable throughout the entire period of the fever, was occasioned, it is probable, by imperfection of impressions produced upon the brain, in consequence of a diminution of nervous energy, the result of both primary and secondary disease.

SECTION V.

GENERAL CAUSES—PREDISPOSING, CONCURRING, AND EXCITING.

Every human being brings into the world with him a certain susceptibility to disease. It is an inheritance attached to the frail nature of man, that plunges him into a thousand ills and afflictions, which, to judge of him in a state of health and vigour, we might think he would set at defiance. This tendency, however, which is thus our birth-right, becomes variously modified by the operation of external powers, and even by natural changes which the constitution experiences in our passage through life. There are some diseases which encrease this tendency, and there are others which annihilate it. While it becomes strengthened by the frequent repetition of intermittent paroxysms, it is totally destroyed at the invasion of small pox or measles. In order then, for the exciting cause of bilious, remitting, and intermitting fevers to operate with effect, there must exist a tendency to this disease, subjecting the constitution to the susceptibility of those causes which have the power to call it forth. It is totally impossible to say at what period of life this predisposition shall with most effect determine the developement of intermittent fever, though the age in which it seems to predominate is from puberty to the 35th year. But in most instances of the declaration of intermittent fevers, it appears that the predisposition to them is acquired,

quired, and arises from a succession of circumstances taking place in the constitution that cannot be discovered by the most acute observer, until by their joint and more evident operation, they visibly incline the body to the invasion of the disease. The circumstances to which I allude are followed by imperceptible changes, which at length giving a peculiar physical education to the system, impart to it an acquired predisposition. In the same manner that different impressions create divers sensations, and either contribute to the enjoyment of health, and all the pleasures connected with it, or produce that uneasiness in the performance of the functions, that makes existence burthensome, and lays the foundation for disease, so morbid impressions occasioned by the agency of injurious powers engraft upon the original state of the constitution new and acquired properties, and susceptibility to disease. I think the acquirement of predisposition to disease is well evidenced in the diarrhœa and dysentery which succeed long-standing intermitting fevers. This tendency in the constitution was very dangerous, and produced consequences that were more irremediable than all the other complicated effects resulting from the fever. I judge from the accounts which have been given me of the Walcheren fever as it appeared abroad, that the strongest predisposition of an acquired nature consisted in debility, which opened a ready way to the invasion of that disorder.

One of the most evident and most common causes which predispose the body to intermitting fever is a high temperature of the atmosphere combined with moisture during the prevalence of southerly winds. The operation of this cause is potent even on the inhabitants of those countries, where these circumstances concur to produce fever, and still more so on the troops of all temperate regions transported to them. It is not an easy matter to say the exact degree of heat which the constitution of man is capable of sustaining without injury. It is one of those powers whose action we support without inconvenience, nay, with pleasure or pain, according as habit has modified the sensibility of the system with regard to its operation. The high temperature of the atmosphere of hot regions is a source of rich enjoyment to the natives, but it imperceptibly, and by gradual advances, destroys the health of an inhabitant of a northern climate.

When the operation of heat and moisture * concurs with partial

* Cold and moisture produce relaxation of the animal fibre, atony of the vessels, and consequently congestions of various kinds, obstructions, very long and obstinate intermittents, scurvy, dropsy, cachexy, and all diseases depending

partial exposure to chills and damps, fatigue, and unaccustomed hardships, to produce diseases, it must be obvious that the debility which predisposes the body to remitting and intermitting fevers is considerably heightened. But besides the

depending on a great quantity of serum. In some parts of France, covered with fogs, and where water is easily pressed with the foot from under the surface of the earth, the inhabitants have a pale yellow countenance, a weak voice, languishing eyes, big bellies, and are very subject to rheumatism, visceral disease, dropsy, and intermittent, and are also incapable of much exertion. Moisture of a climate produces dysentery, probably by tending to change the bile, and to give rise to a bilious diathesis, at least when combined with heat, though if combined with cold, the diathesis may be more cachectic than bilious. One of the most familiar diseases at Sennaar * is dysentery, which is more or less fatal as it declares itself at the beginning of, or at the end of rains, and at the return of fair weather. It is commonly attended with intermittent fever, and often terminates in it. Moreover, people are frequently seen there with schirrous livers, and even apoplexies are equally common. In a country of that kind it is chiefly the venous system and the liver which appear to be the origin of, and the principal seat of febrile diseases. There also, hepatitis, the yellow fever, exanthematic fevers, and cutaneous diseases by the sympathy which exists between the skin and the liver, prevail. Acute diseases, on the contrary, as pleurisy, and peripneumony, in one word, all the diseases of the system, which have their origin in excessive tension of the solids are very rare. Where moisture is joined to heat, the fibres of the digestive organs are relaxed, and communicate their atony to the head, while this in turn enervates those organs which after the laws of sympathy, reign between this and other parts of the body. Let only three Indians of the southern provinces of America have food given them, and they will not consume more nourishment than would satisfy one English peasant. Let a great heat prevail amongst the inhabitants of a cold climate, and their appetites will be found to diminish. Send a German into Italy, and he must conform to the frugal way of living of the inhabitants, or he will soon fall ill.

Baglivi remarks that the inhabitants of Rome eat very little, and that their aliment chiefly consists of vegetables. He adds, that strangers who go there, by degrees lose their appetites, and are obliged at last to conform to the Roman manner of living. But what happens if the inhabitant of a warm country goes into a cold climate? Send a Spaniard into Germany and he will eat enormously, or send a frenchman from Languedoc or Provence into Russia, and he will do the same thing. The power of the digestive faculty being in an inverse ratio with that of the sensitive faculty, as Hunter and Blane have observed, it necessarily follows that in warm climates where the latter is heightened, and the brain, and nervous system are irritable, that digestion takes place with difficulty, hence the necessity of sleep after dinner for the inhabitants of these climates. This is one of the wise means that nature employs to recruit the organs of digestion, by suspending all action of the brain. It is thus that in hydrocephalus, and apoplexy, where the exercise of the senses is partly abolished, that digestion is performed better than in health. It is very probable that in cold countries the appetite and digestion are not only promoted by the action of the cold on the skin, which is communicated to the coats of the stomach, but even by some narcotic virtue which it exerts upon the nerves themselves.

* Bruce.

pre-

predisposition to fever which is acquired by heat and moisture, fatigue, &c. we may add cold and moisture, the particular state of the body when it is exposed to an exciting cause, affections of the mind, particularly those which tend to depress it, as disappointment, sorrow, and distress, indigestible food, ardent spirits, harsh wines, and bad water.

It is generally acknowledged that the exciting cause of intermittent consists in the application to the body, of marsh exhalations which are produced by the combined action of heat and moisture on vegetable and animal matter, the force with which the exhalations act depending upon their concentration and the degree of heat to which the moisture may have been, exposed. Intermitting fevers are observed to be endemical in damp situations, and hence the reason of their prevailing in fortified cities, when the ditches which are filled with water become nearly empty, and allow effluvia to escape in the atmosphere. There is something in the moisture of a constantly damp soil very injurious to the human constitution,* so that any situation, having swamps, ponds, ditches, banks of rivers and stagnant water, always engenders intermitting fevers. By the same rule all those spots of ground occupied by large woods which prevent a free circulation of air, and occasion moist decayed vegetables to dissolve, produce similar diseases. The stagnant waters of marshes are known to be very unwholesome by the pernicious effects which their evaporation produces in the air. That vitiated and mephitic air, designated by the name of hydrogenated gas of marshes has some analogy with the air changed by the respiration of a number of individuals shut up in a small space. Morozzo assured himself of this by inspecting the under surface of the leaves of willow trees planted near these waters. He found them loaded with such a quantity of black sooty matter that from three leaves he was able to collect a grain of soot. He suspects that this emanation of hydrogenous gas is one of the means of which nature avails herself to convert plants into turf. The diseases incident to marshy situations depend upon the combination of moisture with heat and

* Nothing shews more effectually the universal relaxation produced by stagnant waters on the body than the following observations. Amongst the adventurers, says Corrè, established on the coast of Algiers and Calla, there are persons who have such obstinate fevers that nothing can shake off, unless they remove to more healthy spots. They first experience upon arriving there, a general constriction on the surface of the body similar to what is felt by rolling it with a bandage, which at first seems to be followed with a sense of vigour and of strength. But gradually weakness ensues, all the consequences of relaxation and dropsies, and intermitting fevers of the most obstinate description.

cold,

cold, and of hydrogenous with carbonic acid gas. It appears that a marshy country is warmer when the sun beams upon it, than another situated in the same latitude, and equally exposed or shut in by hills. The beams of the sun will be reflected by a thick atmosphere loaded with vapour, and of course distribute around more warmth, than if they traversed a light thin air that opposed to them no obstacle. In proof of this, Theophrastus observes that vegetation first begins in marshes, then in plains, and at last upon mountains. By the same rule, marshes will be colder in winter than other lands from the presence of aqueous vapour, and from the absence of the sun's beams, as well as their oblique direction when darted to the earth. A strong action of the sun on decayed vegetable substances in marshy grounds is supposed much to increase the activity of miasmata. All those marshes occasioned by the inroads of the sea, as in Holland, are said to be the most injurious to the human body.*

In northern countries intermitting fevers have been observed to be of frequent occurrence at the beginning of a thaw: but though the action of putrid vegetable substances gives rise to these disorders, at other seasons, they cannot be referred to such a process at the breaking up of winter. Cold and moisture alone do not appear to be capable of producing them, neither do heat and simple moisture contribute much

* To it, not only fevers are attributed, but that relaxation of the animal fibre which gives rise to an accumulation of fat and to diseases which are the consequences of it. The Dutch who are very fat have a weak vascular system, and are subject to all the affections which depend on such an organization. "Physica hac certior," says Arbuthnot in quoting the passage of Hippocrates, "haberi nequit; hi enim effectus ex laxitate fibrarum procedunt: hæc vero ex nimiâ humiditate."

The free use of bad water after fatigue is attended with some risk under circumstances less disadvantageous to health than those in which the troops were placed at Walcheren. The bad effects of water are obviated by the addition of a little spirit, and revive the languor and sinking energy of the fibres of the stomach which contribute in no slight way to favour the invasion of fever.

Bibentibus autem, says Hippocrates, lienes semper magnos esse et compressos, ventres veró duros et tenues, ac calidos. Humero vero est jugula, et facies extenuari. In lienem enim carnes colliquescunt, ideóque graciles sunt. Tales veró edaces et siticulosos esse necesse est, ventresque tum superiores, tum inferiores siccissimos habere, proindeque medicamentis valentioribus indigere. Hic quidem morbus ipsis et per æstatem et per hyemem est consuetus.

Ad hoc etiam aquæ inter cutem tum frequentes, tum maximé lethales contingunt. Multæ enim intestinorum difficultates et alvi profluvia per æstatem incidunt, et febres etiam quartanæ diuturnæ. Hi autem morbi cum longius producuntur, hujusmodi naturas ad aquam, inter cutem deducunt. et perimunt.

to

to the production of fever. But there can be no doubt, I think, of the exhalations of the earth giving rise to fevers, since, in most situations where the ground is flat and moist, fevers prevail more or less, particularly after heavy falls of rain. The noxious effluvia of the earth, moreover, appear capable of combining with atmospheric air, and of being conveyed to a great distance without having their injurious properties destroyed. I believe, however, intermittent has occurred in countries where there are no marshes, but this might depend upon there being a number of woods in the country, which never fail to make it insalubrious. It seems also certain that intermitting fevers are more common in temperate zones, than under the equator, at least, true intermitting fevers are less prevalent there than fevers of a remitting kind. In very cold countries, intermittent is a rare disease. I presume that certain conditions of the air must be more favourable to the propagation of intermitting fevers than others, but which those are I am totally ignorant of. If heat and moisture produced miasmata should not the sea always abound with them? This we know is not the case. Although cold climates do not engender the disease, cold seems to be an essential agent, especially when combined with a poor watery diet.

Ague is said to be common in some countries when cucumbers are ripe, and in England, an easterly wind has a great effect in continuing and renewing the disease as I observed at Ipswich. It is a well known fact that intermittent will sometimes resist every remedy during the prevalence of an easterly wind, and give way almost spontaneously on the wind changing to the west. Persons have been known to feel the effects of ague for years after its first invasion, when an easterly wind has set in, as many physicians have observed.

It is less the degree of cold, I suspect, that proves injurious, than the mode of its application. A partial exposure to it when the body is inactive is very dangerous. It is possible for a person to be exposed to the action of cold for some time without any bad effect, but subject him to its influence suddenly, or weaken him by its continued application, and he will be very liable in particular situations to be seized with ague. Damp, too, like cold, is a concurring cause of intermittent. Is it not for this reason that those persons who occupy the lower part of a house are more likely to be attacked with the disease, than those who reside in the upper apartments? By the same rule, sitting down in wet clothes, sleeping in a damp room, or wearing wet apparel will incur the risk of the same disease taking place. If every disease is

to

to be regarded as first commencing in the organs of sensation, the injurious agency of cold combined with moisture, is, I presume, to be referred to an impression first exerted on the sensible fibres of the skin, which, when communicated to the brain, preternaturally augments the actions of the vascular system. But all the causes I have mentioned will not avail in producing intermitting fevers, unless marsh effluvia be applied to the body. Brocklesby found nothing more productive of ague, than soldiers lying on the damp ground in camp, and Mosely pretends that agues are not uncommon during the rainy months, in warm climates, even where the situation is not marshy.

I think the putrid effluvia in fortified cities must prove an accessory cause of the disease. Effluvia, whether vegetable or animal, in a concentrated state occasion nausea and sometimes vomiting. These, therefore, combined with dampness of the air, and some other concurring causes will tend to make the inhabitants of and sojourners in a marshy country, very subject to intermitting fevers. The effluvia of marshes exercise their influence in a very prompt and certain manner on the persons who have the misfortune to be exposed to them, and who are not by habit accustomed to their operation. Persons who visit Aiguesmortes near Montpellier, often feel the effects of the marsh miasmata before the expiration of six hours, and if the intermittent attacks with coma it quickly becomes mortal, unless the bark be administered at early periods and in very large doses. If there are countries wherein stagnant waters appear innocent, says a modern writer,* the exception is to be attributed to some physical or local cause which lessens and destroys their deleterious property. The rivers, for instance, of Egypt and Asia do not produce the bad effects of those of Piedmont, and the south of France, because probably the action of the sun in these burning countries disperses by a more rapid evaporation the humidity occasioned by inundations. It may too be observed with respect to Egypt, that the northern winds, at the time they augment the rapidity of the evaporation, diminish the unwholesomeness of its rivers. Why remitting and intermitting fevers should prevail in the Netherlands is evident from a cause different to those I have alluded to in this section. In no countries in the world, probably, are there greater and more sudden alternations from heat to cold than in the Belgic. Hence then, transitions from one state of the atmosphere to another are to be placed amongst the concurring causes. In

* Corrè.

spring and autumn, the thermometer varies from 12 to 16 degrees, two or three times in the course of the same day, which shews the great variation of temperature in that country.

In all ages the influence of climates in producing diseases has been adverted to by physicians. Let us say with Lucretius,

"Nonne vides etiam cœli novitate et aquarum
Tentari, procul a patria quicunque domoque
Adveniunt, ideo quia longe discrepat aer."

We know from experience that the body accustoms itself to the variations of the air, when the gradation takes place insensibly, and that it suffers injurious changes when the transitions are sudden, particularly when the constitution is delicate and irritable. If humidity of the air, I have before said, be accompanied with alternate heat and cold, it is highly unfavourable to the health of the body. It produces a relaxation of the fibres, brings on scurvy, anasarca and jaundice, all of them accompanied with that state of the body which it is difficult to remedy without a change of air. Combined with heat, moisture of the air, we have found, is still more detrimental. Effluvia of different kinds are formed, which reduced into gas, convey with them the direst diseases. The plague itself originally from Greece or Syria, occurs in Egypt from miasmata, after inundations of the Nile upon the adjacent country. Remitting and intermitting fevers as well as scurvy, proceed every year from the canals of Holland, where large quantities of fish putrify. The bad air of Rome comes in summer from the ancient aqueducts, from which water proceeds and inundates the plains. Dysenteries and malignant fevers are very prevalent where vegetable substances undergo putrefaction. The heat, in these circumstances, combined with marsh miasmata changes more or less the state of the oxygen necessary to animal organization, and even destroys in the living body the faculty it has of absorbing this principle. To speak in the language of chemists, the carbonated hydrogen superabounds, and the elements of the bile being in excess, that fluid forms much more abundantly, than the hydrogen, in excess, makes the base of the oil of which bile is in a great measure composed. According then to this theory it is easy to see how this secretory organ experiences conjestion as the bile becomes more abundant. If we consider the great variety of effluvia which bodies are constantly emitting, their diffusion in the atmosphere, their numerous combinations, and ready admission into the absorbent system, we may easily conceive how active will be their morbid

morbid influence on the animal economy.* It is greatly to be wished that all these points were much better known than they are, and then we should accurately understand how the variations of the atmosphere influence the natural operations of life, and in what manner they modify the primitive character of a disease, and give it the particular appearance which claims such minute attention in the practice of medicine. There are parts of the body or organs, upon which these variations seem to have a more particular influence than others, which seem to depend upon the extent of surface, the particular sensibility, their absorbing power, and the regions of the body in which they are seated. The most important by far are the skin, the lungs, and the alimentary canal, which Hufeland has with some propriety called *atria morborum*. Endowed with high sensibility and irritability, these organs have a remarkable connection with each other and with every part of the frame; besides which, they are submitted to the agency of external bodies more immediately or more constantly than any part of the system. Hence it is that gastric diseases are so extensive and important, and that affections of the abdominal viscera have so great an influence over the animal economy. The lungs wherein the communication is established between the blood and the air, by the same reason, are subject to various diseases; their sensibility to some specific irritation, as of certain gases, in no small degree inclines them also to that disposition. The skin, in the next place, by its exquisite sensibility and its immediate connection with the air and other external powers, has the power of modifying its condition, and its absorbent faculty, and hence the important function it performs in continually purifying the blood of those parts, which if retained, might be injurious; independant of the sympathy it exerts with every part of the system, and of the impressions and affections it partakes of in common with it.

SECTION VI.

TREATMENT, GENERAL AND SPECIFIC—USE AND EFFECTS OF MERCURIALS, AND DRASTIC PURGATIVES—CASES ILLUSTRATIVE OF THE SAME.

It is, I believe, now almost generally admitted by physicians, that an attempt ought to be made to shorten the duration of

* Corrè.

the

the paroxysm of intermitting fever, and to provide against its return. In this respect, in the treatment of intermitting fevers in this country, practitioners are unanimous, though the safety and propriety of allowing this disease to run on, has even of late years been much insisted upon by German, Italian, and above all, French practitioners.* However, the most accurate observers have informed us that obstructions of the viscera, and various diseases, have occurred oftener when the fever has been allowed to run its own course than when it has been stopped by art. But, notwithstanding the expediency of shortening the duration of paroxysms, and of preventing a recurrence, be admitted by the majority of physicians, yet the means which have been employed by them for the accomplishment of these ends, have been widely different, and of course, have much influenced the success of their practice. The caution given by antient physicians respecting the putting a stop to intermittent, proceeded from the dread of retaining in the body some morbific matter which might fall upon the viscera, and put an end to life. In considering the means commonly resorted to for stopping intermittent, I shall endeavour to shew that in the application of a remedy, in the protracted state of the fever I had to encounter, success was always very doubtful from the co-existence of other diseases, the morbid bias the constitution had acquired from a repeated recurrence of the paroxysms, debility, idiosyncracies, and the inefficacy of those medicines which generally prove serviceable in more recent periods of the complaint. This must inevitably be the case where extensive visceral disease has formed, where dysentery and dropsy have succeeded, and especially when the original disorder is combined with pneumonia. If the usual means of treatment for intermittent were had recourse to here, it must be evident that they would not merely fail, but give a new bias and a more active character to it than it possessed before. It never fell to my lot to observe that intermittent alternated with a disease of more fatal tendency than itself (a circumstance that has every now and then been remarked to occur) as every

* "Magna questio est, seu potius tum erat, cum certum febrium intermittentium remedium nondum repertum esset, tuto sanari possent, necne. Etenim hæ febres censebantur esse naturæ conatus, quibus latentia morborum semina expellerentur; quæ scilicet, si illæ præmaturæ sublatæ essent, nescio quas tragdias in corpore excitarent. Medicis magni nominis placuit hoc sententia; de qua igitur, cum primam medicinam fecerem, dubitare me non sinebat tantorum virorum autoritas. Sed hanc opinionem indies levavit usus et jam diu mihi persuasum est febrem intermittentem tuto finiri, quam primum id fieri potest. Multa autem mala oriri vidi, ubi ægri diutius cunctati sunt accessiones prohibere." Heberden. Comment. Morb.

other

other affection which appeared in the course of its long protraction was a consequence of it, with the exception at least of pneumonia and angina, the first of which it must be admitted was seldom subdued. It has been deemed practicable and even advisable in protracted intermittent with extensive visceral disease, to prevent at any rate, by the bark, a recurrence of the paroxysms in the first instance, and to make the visceral obstruction a secondary object, leaving it to be combated afterwards by its appropriate remedies. But however great may be this desideratum, I am convinced it was not easy to put it in execution, for so paramount was the tendency to a recurrence of the paroxysms, so long as the viscera were greatly and organically disordered, so prone the system to return to its morbid bias, that I never was so successful as effectually to obviate this recurrence, unless I could remove the consequences together with the fever at the same time. The most I was able to do by this practice was to procure a temporary suspension of the paroxysm for a few days, and this but rarely; so that I was led to modify my treatment in such a way, as at the same instant to prevent the recurrence of one and attempt the removal of the other. I very frequently found it necessary to give small doses of bark for the sole purpose of supporting the patient's strength, even while under the influence of a mercurial course; for when this had produced a certain action, the exhibition of the bark to stop the paroxysm became less necessary, its force yielding, and its recurrence ceasing for a time by the action of the mercury. I never could prevent relapses by the bark solely, nor overcome visceral obstruction, though I am aware that many authors have presumed that obstruction of the viscera might be removed by this remedy. I did thus much by the bark; I enabled the patient to struggle longer under the disease, and gave him a better chance of recovery than he would have had without it.

Of the propriety of preventing a return of the paroxysm before visceral disease has been formed, and previous to the appearance of jaundice and dropsy, there cannot be a doubt; but as to making it the chief aim, in advanced disease and all its complicated consequences, I do not without limitation assent. I remember to have seen intermittents suddenly stop by the exhibition of large doses of bark, where the viscera of the abdomen were oppressed with obstruction, and hydrothorax prove an immediate consequence, carrying off the patient in a few days. I once saw it suddenly cease by plunging the patient into cold water, and the same affection supervened as in the other case. In a variety of instances I have

have observed the sudden stop given to the paroxysms, in protracted disease, followed by delirium, and profuse epistaxis. In several others, diarrhœa and dysentery appeared to me to invade quickly after. I am not however so certain of this, as they were the uniform and constant consequences of old standing intermittents. Dr. Gregory mentions that in a case of intermittent stopped by brandy, pepper, and beer, severe epistaxis came on, that the disease returned afterwards, and was stopped again the same way, epistaxis succeeding a second time. In another case, where the person had taken turpentine while the Doctor was giving bark, a bloody discharge occurred from the groin, which were the only two bad effects he ever saw from stopping intermittent. But it must be remembered that these took place in recent disease; the effects to which I have alluded, occurred after long protracted fever.

The torpid, irritable, and disordered state of the alimentary canal, claimed a particular attention at the beginning of the treatment; even in the chronic state of the fever in the troops at Ipswich, a disordered state of the stomach, attended with nausea, loss of appetite, cardialgia, heaviness of the eyes, foulness of the tongue, and smallness of the pulse, called for a few grains of ipecacuanha, and those medicines designated by the appellation of absorbents; unnatural stools, and the tension of the abdominal region seemed to point out the propriety of administering active purges, which accordingly were liberally exhibited and with the greatest success. Far from leaving the bowels in a more torpid state afterwards, inducing debility, or a train of symptoms the consequence of irritation, sometimes the effect of sharp purging, they raised the spirits, gave freedom to the pulse, restored sensations of ease and comfort to the abdominal viscera, and left the bowels in a fitter state for performing their functions with energy. A tendency to diarrhœa, often symptomatic of irritability and weakness of the intestinal canal, merely indicated the necessity of aromatics and astringents; though when this disease arose from the changes of the intestine itself, which I shall hereafter fully consider, a far different treatment was demanded. At the approach of the paroxysm, various remedies of a secondary nature were requisite for the purpose of relieving urgent symptoms, abating the duration of the fit, and for breaking the morbid events that were taking place during its progress. There was not, in reality, a necessity, in the fever as it manifested itself at Ipswich, for resorting to vigorous measures for diminishing the violence of the paroxysm, at least, not to the powerful measures employed in the early stages of bilious, remitting and intermitting fevers of hot countries, where plethora induces

dangerous

dangerous symptoms and adds highly to the severity of the attack. The hot stage of the paroxysm was mostly diminished by directing the patient to take an opiate, tepid drinks of tea and barley water, or, if there prevailed much debility, by allowing small quantities of wine or other gentle cordials: acidulated drinks seldom proved serviceable, except where nausea was an urgent symptom, when the supertartras potassæ, dissolved in water, or the sulphuric acid copiously diluted, answered every purpose. The nitric and muriatic acids diluted with large quantities of water and mixed with sugar proved a grateful beverage to the sick without augmenting the pyrexia. I generally prescribed a drink with the nitric, my colleague, Dr. Williams, with the muriatic acid. The vegetable acids were too dear for common use, and would in no respect have been superior to the acids we employed. If the nausea still prevailed, it was sometimes relieved by hartshorn and water, or more effectually still by camphor, ammonia or opium. Cleghorn observes "that while the cold fit continues, the patient should abstain from drinking: for at that time the vena cava and subclavian vein are so full and turgid by the blood's being driven from the surface of the body to the internal parts, that the discharge of the thoracic duct is prevented: hence the liquor swallowed down remains in the alimentary tube, loads the bowels, and creates anxiety. And therefore if the patient is thirsty, he must endeavour to allay it in the best manner he can, by washing his mouth often, and eating slices of lemon sprinkled with sugar. In the mean time, if a nausea or inclination to vomit supervene, these salutary attempts of nature should be promoted by large draughts of warm water or weak broth, which commonly bring up a quantity of bilious matter, to the immediate relief of the sick." Rush also thinks that scarcely any drink should be allowed in the cold fit. Fordyce, on the contrary, would indulge the thirst in every stage, and prefers instead of cold water, which is thought the best beverage by some physicians, water mixed with farinaceous matter, in order that it may not pass so quickly through the emunctories of the body. I saw very good effects result from giving ammonia to the quantity of eight grains at the approach of the cold fit, which it shortened; it also rendered the hot stage milder, and relieved oppression at the præcordia, a symptom of much suffering and urgency in a great proportion of patients. Instead of the ammonia I have sometimes employed æther and laudanum in peppermint water, or Hollands gin.

At the approach of the paroxysm it was often necessary to put the patient's feet into hot water, or to apply a hot brick to them, either of which assisted in relaxing the constriction of

the

the surface. I have found it very serviceable to have the whole body rubbed with flannel, just before the cold stage came on. The torpor of the vascular system, has by that means appeared to me to be much diminished. Except where the bowels were severely constipated, I saw no harm arise in any respect from giving three or four grains of opium at the invasion of the cold fit. Opium always produced decidedly good effects when thus administered, but it never succeeded in stopping the paroxysm as it has been affirmed to do. I agree with Dr. Winterbottom who says, that two grains of opium given before the paroxysm is expected, soon bring it to a termination, producing diaphoresis, and relieving torpor and pains in the head. I frequently succeeded in breaking the force of the fit by directing a drachm and a half of the tincture of opium to be rubbed into the pit of the stomach, at its approach. I scarcely think that the tincture taken after Lind's plan was more effectual in shortening the duration of the paroxysm or in relieving its most urgent symptoms. A sensible effect was produced in ten minutes by the friction. The breathing became so much easier as to be noticed by the bystanders, the tremor abated, the countenance grew calm and tranquil, and the patient agreeably passed into the hot stage, which in its turn was also rendered milder and shorter. It oftener than once became a subject of consideration with me how far the administration of opium in the Walcheren intermittent combined with visceral obstruction (the disease I had chiefly to contend with) could be repeated with safety, at the recurrence of each paroxysm. There were certain symptoms and affections which seemed to render the use of opium improper, such as a torpid state of the intestinal canal with inflation, general tenderness and induration of the abdomen, inflammatory pains of the spleen, liver, and intestines, gastric diseases, constant pyrexia with thirst, delirium and coma. In some of these cases the tongue retained its white and foul appearance for days after, the bowels became obstinate to move, and the secretions of the urine and perspiration, were rather less than previous to its free exhibition. In many other instances, idiosyncracy interdicted its employment, and in dysentery it was far from being a serviceable remedy except in the latter stages of this fatal affection. Lind who is so great an advocate for opium in the cold stage, surely means to confine the propriety of its general administration to recent cases of intermittent, for there were strong reasons for prohibiting its use in protracted fever combined with chronic disorders. In three hundred instances, Lind found opium invariably serviceable. Far from its producing pain in the head, and the usual inconveniences of opium, he found it always

always relieve the head-ach, (which I have also done,) shorten the fit, occasion copious perspiration, and determine more complete intervals and apyrexics. Lind himself however objects to the employment of it where delirium prevails. In the cases I have named as improper for opium to be employed, I found excellent substitutes in æther, camphor and ammonia, which seldom disappointed my expectations in diminishing the duration and the violence of the paroxysm. I have known a drachm of camphor reduced into a powder, and applied to the pit of the stomach at the approach of rigor, break the force of the cold and quickly bring on the hot stage. This has sometimes succeeded as well as opium. I must nevertheless acknowledge that in a large proportion of cases, opium proved a safe and effectual remedy in shortening the paroxysm, and was the more valuable on account of the constitution having become less susceptible of benefit from the bark, both from its long use, and the gradual increase of visceral obstruction, an affection which required the patient to be put under the influence of mercury, to take active purgatives, and such other medicines as I shall hereafter have occasion to detail.

It was usual for me to prescribe a mixture of tincture of opium, æther and peppermint water, with directions for it to delivered by the Orderly to the patient, at the approach of the paroxysm. The sick in general experienced so much benefit from this composition that they always entreated to have a dose of the ague mixture, which, to use their own expression, they said soon put an end to the fit. If the hot stage were ushered in with great pain of the head, and oppression at the præcordia, I frequently repeated the opiate, in a smaller dose, with evident advantage. Opium appeared to be beneficial in the paroxysm in two points of view, first, by virtue of its stimulant property, in rousing the excitement of the system, and thereby obviating venous plethora, atony, and torpor of the whole body, and the constriction of the surface: next by relieving pain, and by virtue of its sedative quality, moderating the action of the vascular system, and diffusing a calm over the universal frame. I found it necessary in case of unusual debility and torpor at the approach of the cold stage to give the patient some diffusible stimulus, such as wine with the opium, with a view to determine the paroxysms to an earlier termination.

That relic of the practice of Sydenham, Boerhaave, and other great physicians, of giving emetics in the cold stage, is still much resorted to by some practitioners. I have strong doubts of the efficacy of such a practice. Emetics must relax the tone of the stomach, already too much diminished by the irritability which generally prevails in the alimentary canal, in in-

termitting fevers, and by the use of stimuli too often indiscriminately swallowed in the beginning of the fever. Sir John Pringle found them very efficacious in the bilious remitting fever of the Netherlands, insomuch, he says, that when a large quantity of bile was evacuated by an emetic the fever was removed at once. But this effect, he adds, was not obtained by Ipecacuanha alone, as he often saw this drug produce an opposite effect and occasion the subsequent paroxysms to be longer and more violent; for which reason it was his practice to combine two grains of emetic tartar with it. Cleghorn observes that vomits at first sight, would seem to be eligible remedies, as they quickly empty the superior part of the alimentary tube which appears to be the part the most oppressed: but as he justly adds the inflammation of the bowels which too frequently accompanies tertians, is exasperated beyond expression by the strong contraction of the diaphragm and abdominal muscles during their operation: and if the liver and spleen are inclined to become putrid, no uncommon case in those fevers, it is needless to point out the dangerous consequence that may result from the repeated efforts of vomiting. I had no opportunity of ascertaining at Ipswich the advantage of giving emetics in the early stages of intermittent, as Sir John Pringle had in the Netherlands. In all those cases that came under my care their exhibition with a view to cut short the fever was not followed by any salutary effect: on the contrary I rather thought the congestions and disorders of the abdominal viscera, were often encreased by them. In those persons who took emetics, the hot stage succeeded as usual, no early solution of the paroxysms taking place as after the exhibition of opium. Nevertheless, Brocklesby says, in allusion to the intermittent which brings on obstructions in the viscera, the cure of these indurated tumours always best succeeded under him, by the use of vomits, given now and then, and by rhubarb joined with calomel purges: and in the intermediate times, by castil soap, attenuating diuretics, and afterwards by bracing the body with bark, rhubarb, and bitter infusion with filings of iron.

Stahl was so attached to the employment of emetics that he blamed other physicians for not giving them. The most eligible period for giving an emetic was certainly the beginning of the fever though no doubt, circumstances sometimes arose in the progress of the disease that made their exhibition necessary at other times. Hippocrates employed them in the beginning of fever. "Incipientibus morbis," he remarks, "si quod movendum videatur, move: vigantibus vero quiescere melius est." Old physicians thought that dysentery was prevented by the early use of emetics.

emetics. Sydenham who preferred vomits to purgatives in fever, was surprized how the small quantity of fluid they sometimes rejected could be of so much service to the patient. "Sæpe miratus sum," he writes, "dum forte materiam vomitu rejectam aliquando acriosè contemplabor, eamque mole valde fuerit ut ægri tantum levaminis inde senserint." At the invasion of bilious fevers, Sydenham generally bled before he gave an emetic, but Hippocrates seldom drew away blood previous to the exhibition of the emetic. It was Sydenham's custom to prescribe emetics when the fever had continued many days, but in this practice I do not agree with that great man. "Ego," he observes on this subject, "quidem die febris duodecimo vomitum imperare non dubitavi etiam cum æger vomitutire desiisset, neque sine fructu: eo namque diarrhœam sustuli quæ sanguinem in peragenda despumatione impediret: quin et prius idem facere minime dubitarem nisi virium attritarum ratio prohiberet." Fordyce advises an emetic to be taken, when a paroxysm soon succeeds a meal, whatever may be the stage of the disease. This practitioner too, in every case of irregular tertian, would postpone the use of the bark, until he had, by emetics or purgatives, made the crisis perfect.

Important as it may be, to obtain a speedy termination of the paroxysm in the early stage of intermitting fever, it appears to be at least of full as much consequence to employ such means as shall fulfil these indications in old standing diseases, since it is not often in our power to resort in the interval to those remedies which prevent a recurrence of the fits. Disease of the viscera, particularly of the intestinal canal, rendered the exhibition of bark not only impracticable, but sometimes injurious: nay I have known it induce such irritation and pyrexia as favoured a return of the paroxysm, and an increase of local disease, which by a kind of reflected operation gave obstinacy and a new denomination to the original fever. Moreover it will appear, by referring to the preceding pages, that such irritation and fever, excited by any means in the system, was a state that terminated in effusion in the chest, brain or abdomen; or was the forerunner of such symptoms as placed the patient's life in the greatest danger.

Although it was a desideratum to put a stop to the paroxysm, in many instances I attempted it with great caution, having witnessed the suddenly fatal increase of symptoms where an effort had been precipitately made to check the morbid bias of the constitution. It was the height of imprudence to make use of cold affusion, which was the most powerful shock applied to the system at the approach of the fit, if the least

least tendency to inflammatory action in the abdominal viscera prevailed, or even if the obstruction was considerable, and the organs much disordered; and hence, I even objected to employ cold affusion for this purpose, when the liver and spleen were enlarged, the habit cachectic, and general pains frequently present. Yet a recurrence of the paroxysm, always introduced a new train of distressing symptoms, weakened the system by its violence, and seemed to call for a remedy that would at once stop that morbid habit, which numerous returns of the fit had established in the body.

However, before I ventured upon the employment of the shock, I cautiously allayed all pain and irritation of the viscera, by purgatives administered at intervals, diaphoretics and opiates, when if the bark failed in preventing a recurrence of the fit, or could not for particular reasons be employed, I directed cold water to be poured upon the patient at the approach of the hot fit, which thus, cautiously had recourse to, often proved a most beneficial remedy in diminishing the duration and violence of this stage of the fever, and in conducting the paroxysm to an easy and speedy issue. Water poured over the whole body, was the most effectual way of applying it; but when this practice was not carried into effect, sponging the body well with vinegar and water was followed by a visible abatement of pyrexia, and a sensation of ease and comfort to the patient. In many cases it has stopped a recurrence of the fit altogether: in some the paroxysms afterwards were mild and short, while in others, its good effects ceased with the paroxysm in which it was employed. It was most serviceable, when the viscera were only affected with slight disease: but even in long standing intermittent, where disorders of the bowels did not prevail, and all inflammatory action, if any existed, had first been removed, it was very useful in rendering the effects milder, and in suspending them for several days in succession. I have repeatedly known patients remain a fortnight free from paroxysms after the second or third ablution with cold water. It was an object of the first moment to produce even a temporary suspension of the paroxysm, as thus further consequences from a recurrence of fever were averted, and an opportunity afforded for reducing the enlargements of the liver and spleen; for while these, or the intestines remained diseased, there was no security against relapse, nor any hope of ultimate recovery.

In the next place I found great advantage in sponging the body with cold water in all cases of constant pyrexia, where the intervals were confused, and without order, especially when there was a prohibition of the use of bark from idiosyncracy, irritability

irritability of the stomach, and visceral disease. The irritation and heat also which arose from too free an employment of mercury, were effectually moderated by sponging the body with cold water. The action excited by the Mercury has quickly been suppressed by repeating this operation two or three times in the day; and all those febrile conditions of the system occasioned by the slow advances of organic disease were relieved by cold affusion. The quick pulse, characteristic of the irritation of the vascular system, became slower, the thirst was allayed, and the patient experienced general refreshment. Where the bark disagrees, or fails in stopping a recurrence of the paroxysm, Currie strongly urges the employment of the cold affusion: nay, if the patient's strength be not too much reduced, the Doctor advises it to be made use of two hours before the expected paroxysm. The affusion appears not only to diminish the force and duration of the fit, but to give immediate tone to the stomach, so as to enable this organ to bear the bark. I never employed it at the approach of the cold stage, though probably it would be serviceable in restoring to the heart and arteries that energy which they lose, when the paroxysm is about to invade. Agreeably to the pathology I have laid down, we ought to excite the action of the arterial system, before the invasion of the paroxysm, in order to diminish the atony of the universal frame, and the constriction of the extreme vessels, which precede and attend upon the fit. This is Dr. Cullen's great aim, and which he presumes is the only way by which a recurrence of the paroxysm can be prevented. Nothing seems more likely to determine this action from the centre of the body to the circumference, and from this to the centre, than cold immersion, the shock of which, unless great debility prevails, will immediately establish that balance of action which is required, in order for the system to resist with effect the invasion of morbid phenomena. It is thus that we may expect to remove the torpor which pervades the frame, and to restore that energy of the nervous and vascular system, and that activity to the capillary vessels, which our senses plainly tell us they are deprived of in the cold stage.

Yet a very opposite remedy to cold affusion has been known to avert the paroxysm, I mean a warm bath, but let not that be urged against the above practice. Our whole treatment with respect to the choice of means, for putting a stop to the paroxysm is empirical. We succeed in stopping a recurrence of the fit, by variously breaking in upon the events constantly taking place in the disease, rather than by any specific remedy, with the exception of bark, we are in possession of. The suc-

cess attending different remedies, indicates that it is of very little consequence, to what medicine we have recourse for that purpose. The warm bath and cold affusion, tobacco, and passions of the mind, have all at times availed in stopping a paroxysm. It seems strange, that tobacco which increases languor, diminishes the energy of the pulse, and occasions the blood to accumulate in the large vessels, in short, to induce that very torpor which is observed to usher in the paroxysm, should avert an approaching one. Dr. Monteath, surgeon of the Northumberland regiment, first mentioned to me that he had succeeded in stopping the fit, by putting a quantity of tobacco to the pit of the stomach, so as to occasion nausea and faintness at the moment of invasion of the cold stage. I made trial of it in several instances, and met with equal success. Ligatures also applied to the arms and thighs, have been found effectual at the moment of attack of the paroxysm. A Mr. Kellie has made a communication to this effect in the Medical Commentaries; he observes, that if two extremities be compressed during the cold fit, the hot stage will come on in three minutes; if the same thing be done, he adds, before the paroxysm, the cold fit will be prevented, and in both cases, the hot fit will be shorter and less violent. So, in one patient in whom the cold stage was coming on, without apprising him of it, I griped him firmly by one arm, and an opposite thigh, the consequence of which was that the shivering in a few minutes abated, but it returned as I removed the pressure, when I again grasped the limbs firmly which was followed by a cessation of the shivering, the patient expressing great astonishment at the quick and easy abatement of the cold fit. The pyrexia which succeeded was very mild, and of short duration. Encouraged by the success of these cases, I was resolved to make ligatures upon some other patients, in some of whom I met with the same successful result. In general the shivering abated sooner, the hot fit was mild, and the paroxysm soon came to a termination: but I was deterred from persevering in this practice, in consequence of having sometimes observed severe pyrexia to follow it, and to give a continued character to the fever afterwards, that was extremely difficult to treat. The propriety of employing ligatures is nevertheless supported by analogy. Hydrophobia has been relieved by applying a tourniquet to the extremities; and in the same manner has the aura epileptica been intercepted, and epilepsy thus averted.

I found the depressing passions all powerfully operate in hastening a relapse. I have known many men who were convalescents, seized with repeated paroxysms, upon being told that they were

to

to be removed from the hospital to barracks, and other depots. The fear of not being equally well provided for and taken care of elsewhere, operated in the most visible manner, by inducing a return of the paroxysms, and fixing on their countenances an air of dejection and dismal despair; while those on the contrary, whose spirits were raised by the exhilarating impression of being permitted to visit their friends on furlough, shook off the habit to a recurrence of the fit, that could in no way have been so well and speedily accomplished.

I shall next make a few observations on the propriety of bleeding in the hot fit. In the disease, as it appeared at Ipswich, this remedy was justly to be regarded as a dangerous one, and indeed only admissible where the disease was recent; where constant pyrexia prevailed with inflammatory pains, tension, and heat of the abdominal viscera, accompanied with strength and hardness of the pulse; where pneumonia supervened and there was a plethoric state of the system. By a reference to the history and progress of this disease, it will appear, that the affections with which it was at times combined, made venesection now and then a necessary remedy. At the beginning indeed of the epidemical fevers of Minorca, described by Cleghorn, and of the bilious remitting and intermitting fever of the Netherlands described by Sir John Pringle, venesection became an important part of practice. Sir John frequently opened a vein, even when this fever had a continued type, a practice he likewise resorted to in intermitting fever, with a view to prevent it from becoming continued also. He observes "when the fever of the marshes is of an ardent kind, it may seem to require large bleeding; but, in general, as the humours have a more putrid tendency than in common, this disease admits of less bleeding than the camp fever, in which, by great and frequent colds, the blood becomes more inflamed. However, in most cases, it was necessary to open a vein either upon the first attack or the next day, if there was no intermission. But repeated bleedings, unless upon evident marks of a fixed inflammation, were so far from producing the desired effect, that they seemed to render the fever more obstinate." Cleghorn also adopted a similar practice, but observes, "when experience had convinced me that the bark was both a safe and effectual remedy: in these circumstances, I then plainly perceived, that such profuse evacuations were unnecessary, if not prejudicial: and of late years, as I seldom omitted to bleed and purge once or twice, I rarely repeated either operation oftener."

I have merely added these observations to shew the inflammatory diathesis of the constitution, at the invasion of all these

these fevers, and not to advocate the practice of bleeding, for I am inclined to think that evacuations of blood are very apt to make agues obstinate, by producing that relaxation which favours a recurrence of the paroxysms, and disposing the viscera in consequence of this to obstructions which induce dropsy and dysentery. In advanced periods of intermittent, except where certain symptoms and combinations with other disorders intervene, such as I have mentioned, bleeding is entirely out of the question.*

Sydenham, Fordyce, and Ramazzani, are all averse to bleeding. I have in recent cases known it change a regular intermittent into an indistinct and anomalous fever. Having then made these premises on this practice, I shall observe that it became exceptionable to employ it in almost every case at Ipswich, except where inflammations of the lungs, bowels, or other viscera, strongly pointed out the propriety of resorting to it. The best time to open a vein undoubtedly is the hot stage, though I believe it may be practised at any period, but the cold stage, or when the body is covered with perspiration. I must observe that when inflammation of the bowels preceded diarrhœa and dysentery, I combated it often with success by the lancet, even though debility seemed to forbid its use. Indeed, I am inclined to think that if the lancet had been resorted to at the commencement of diarrhœa preceded by pyrexia, and acute abdominal pains, the ex-

* "Copious evacuations by bleeding and purging, are improper. Gross glutinous diet, rapid ropy drinks, as stagnant heavy water, foul beer, and the like, render these agues very anomalous, obstinate and dangerous, and make them frequently degenerate into malignant, putrid, and slow nervous fevers, otherwise they end in dropsies, jaundice, or universal obstructions of the viscera of the abdomen, and frequently in diseases of the genus nervosum. In a word whatever takes down the spring of the fibres too much, and weakens the crasis of the blood, will be productive of these mischiefs; and this especially, when due perspiration is frequently interrupted by cold damp air, want of due exercise, gross heavy slimy diet, as fish, lettuce, cucumbers, and other watery insipid fruits, which are known to suppress the perspiration greatly.

"These observations then evidently shew the necessity of using a warm, invigorating, attenuating regimen in the cure of agues, which affect persons of a lax habit of body, and a poor thin blood; in a particular manner when a wet, foggy atmosphere prevails. Under such circumstances the cortex of Peru, however good and carefully chosen, frequently proves ineffectual, unless assisted with proper alexipharmics, as, rad. serpent. virgin. contrayerv, myrrh, camphire, &c. After four or five paroxysms, warm chalybeates may be added with very great success; but never be too hasty in giving the bark, or chalybeates, where the patient hath a yellow cast of the countenance, a tense abdomen, and costive habit of body. In which case, mercurials, saponaceous deobstruents, rhubarb, aloetics, regenerate or soluble tartar, should be premised. Huxham.

hausting

hausting consequences of a continuance of this affection, would have been frequently obviated. The success I experienced in resorting to bleeding in three or four cases, of diarrhœa combined with considerable action of the arterial system, incline me to infer it might be often practised with advantage at the commencement of those bowel affections that proved so obstinate and difficult to treat.

I visited three individuals who had been attacked with ten or twelve paroxysms of intermittent, of the double tertian type, and in whom diarrhœa supervened, with constant pyrexia, a full pulse, foul tongue, considerable thirst and headach. The febrile state of the body succeeded the diarrhœa, and augmented in severity, as that disorder became more violent. It was not colliquative diarrhœa, but it was attended with acute abdominal pain and tenderness around the umbilical region. The patients were robust, and indicated the safety of resorting to venesection. I ordered them to lose eight ounces of blood. Scarcely six hours had elapsed before the stools which had hitherto been copious, and accompanied with griping, diminished in frequency, and were voided without pain, gradually acquiring more of their natural colour and consistence. I had no occasion to prescribe a single medicine for the complaint. The diarrhœa ceased, the pyrexia subsided, and the stomach soon obtained sufficient tone to bear the bark.

It does, undoubtedly, require much practical discrimination to ascertain the precise period at which a bleeding should be practised in the diarrhœa of common occurrence, after a continuance of intermittent. Those who might choose to consult the debility of the system, rather than the diarrhœa, would probably omit this practice however inflammatory the symptoms, with which it might be attended. The turgid state of the mesenteric vessels after death, with a deep red colour of the bowels, occasioned by intermittent terminating in diarrhœa, affords a strong presumption that inflammatory action of the intestines was a frequent precursory affection, and that a general, or, at least, one or two local bleedings, might have been employed with the prospect of averting its fatal tendency. Of the propriety of practising venesection in dysentery, attended with pyrexia and high inflammatory action of the intestines, there cannot be two opinions: but even here it ought to be resorted to in the beginning of the disease. A general bleeding was certainly too active a remedy, to try in common determinations of blood to the head and abdominal viscera, for these were never symptomatic of universal plethora. An active purge in this case answered the

purpose of an evacuant very well, and probably accomplished as much as a bleeding, and without entailing similar debility on the constitution.

Of all bleedings, cupping near the head or the diseased viscera, appeared the most proper for the patients at Ipswich. Dissection gave me an opportunity of judging of the probable advantage to be derived from local bleedings, and I regret that it did not become a frequent practice. In general, blisters, fomentations, the warm-bath, and injections, were used in place of cupping instruments.

I have said that venesection in the hot fit might, in some particular cases, be employed with perfect safety; but as the autumnal fever of Walcheren was apt, as it appeared in England, to become anomalous and indistinct, and was always accompanied with much debility, purgatives, dilution, and diet were the more proper preliminary measures to be taken for preparing the system for the bark. However, there were particular exceptions which clearly pointed out the necessity of opening a vein. I have known the difficulty of breathing so distressing, the head-ach so violent, the pains and heat of the whole body so urgent, and an inflammatory action of the abdominal viscera so well marked, in and before the paroxysm, that I have not hesitated to take away several ounces of blood: but these were points in which the practitioner was obliged to exercise his own judgment, and of that nature, which no general rule or system could direct him in the management of.

Having considered the curative means to be employed in the cold and hot stage of the paroxysm, I shall next take a view of the remedies which I had recourse to in the interval. Previous to this, let me mention there was seldom occasion to do much during the sweating stage. Where greater debility than common prevailed, small quantities of wine were allowed, in order to prevent too great an exhaustion of the living powers, and that atony, which contributed to make the subsequent paroxysms more obstinate and anomalous. I have given a few grains of columba at this time, whose astringent and aromatic property has sufficed to remove languor, and the oppressio virium which were now and then much experienced at the termination of the paroxysm. Where the sweating was trifling, and inadequate to the final solution of the fit, which, in nine cases out of ten was the case, it was necessary to promote it by diluents, a few grains of camphor, or weak wine and water. On account of the reciprocal influence of the local disease of the viscera, and of the original fever upon each other, a new state of the system was induced

that

that apparently resisted a perfect solution of the paroxysm. It was always easy to check the perspiration, if it became profuse, by taking the patient out of bed, wiping him dry, and putting on him fresh linen: but it was almost impossible to determine a sweat that proved critical. You cannot prevent a soldier from getting up before he is thoroughly recovered from the fatigue of the fit, and what is still worse, from exposing himself to cold with his body only half covered with clothes, an imprudence that frequently gives rise to angina, enteritis, pneumonia, and an increase of the disease of all the abdominal viscera. At the same time, I believe, it is improper and even hurtful to confine him to bed when the paroxysm is gone by.

In the interval, as at every period of the paroxysm, one of the greatest indications to fulfil, was the obviating debility, which was paramount, in the men at Ipswich, to every other consideration, and required all the assistance that could be given by diet and medicines, in order to prevent it from conducting them by slow and imperceptible advances to their tomb. There was a peculiar diathesis, in which irritability was combined with slow inflammatory action, debility with constant pyrexia, and debility with a particular languor of the nervous system, which in some respects seemed to render evacuations necessary to obviate an increase perhaps of local disease, while, in others, it forbade their employment, lest the living powers should be unable to recover the shock they might sustain, by their operation. I knew no remedies so proper for obviating this mixed diathesis, as purgatives repeated at proper distances in the interval. In every instance they appeared to me necessary to remove vitiated secretions and acrid substances from the primæ viæ, previous to the exhibition of the bark. In protracted intermittent, the secretions of the intestines, stomach, and liver, were deficient and vitiated, as the colour and consistence of the feces, and distension of the intestinal canal evinced; which was more plainly shewn upon dissection. But these changes in the secretions of the chylopoietic viscera, did not confine their effects to the derangement of the bowels, by producing obstinate costiveness, or diarrhœa; but also gave rise to a constant pyrexia and thirst, which were very distressing to the patient, and contributed, in no slight degree, to make the intervals confused and irregular. I am now alluding to a mere alteration in the secretions, without organic disease; though this was always an accompaniment of protracted fever in some of the viscera. Now, purgatives avert consequences of the nature I have described, produce a softness of the skin, a sensation of comfort and

well

well being, and commonly induce refreshing sleep, of which patients, as mine, at Ipswich, stood in the greatest need. The efficacy of purgative medicines is impressed on the public mind by Dr. Hamilton's book. At all times, indeed, purgative medicines have been much extolled by practitioners of different countries, but by none more than the French, who seldom treat a fever in any other way than by diluents, purgative medicines, and warm baths. In hot climates, purging has always been thought a safer practice than giving emetics, or drawing away blood. Fifteen or twenty grains of calomel is a common dose, nay, fifty grains of it have been taken for days together. From experience, I found that the patients at Ipswich, at once contending with acute and chronic disease, were able to support a vast number of stools daily, without experiencing any weakness from them; nay, they have been obviously benefited by them, when procured at proper intervals. Cleghorn observes, " in semitertians and remittents, which approach to the nature of continual fevers, I give a cathartic early in the morning of that day on which the symptoms are most moderate: hastening the operation with glysters, (if occasion requires) so that it may be finished before the middle of the day, about which time the patient commonly grows worse. In true double tertian type, there is generally an interval every morning, in which the purgative may be administered; but that which succeeds the worst fit is the most proper, as it is more calm, and continues longer than the other." I was in the habit of prescribing purgatives of that active nature, in visceral obstructions, which seldom failed to operate, so that I was scarcely ever under the necessity of aiding them by throwing up injections. I found no medicines superior to calomel and the sulphate of magnesia, in acute disease, with high pyrexia, or calomel combined with jalap. In all cases where a saline purgative appeared the most proper, I had recourse to the sulphate of magnesia, which was well enough suited to recent disease, especially if it partook of a continued or remittent form. In the same way, as Cleghorn and Sir John Pringle have observed the type of fever to be changed by a purgative medicine, and from an indistinct, to acquire the character of a well marked disease, so have I known by administering a similar remedy, an irregular and anomalous intermittent assume the double tertian, or simple tertian type with distinctly marked intervals. In the case of determination to the head, the spleen, or liver, with violent pyrexia, a purgative medicine was invaluable; but taken in another point of view, medicines of this class were of the highest service in obviating that tendency to visceral disease, which was the

common

common consequence of protracted fever. Their seasonable exhibition, as soon as tenderness or induration began to be felt in any of the organs of the abdomen, repeatedly averted the congestion with which they were menaced, and even removed it when formed to a certain extent only. I am inclined to think that drastic purgatives, in a great number of instances, as the cases I shall insert will shew, were often more serviceable than mercury, in diseases of the spleen, liver, and intestines. The patients to whom I administered saline purgatives, were few, compared with those who took drastic ones. By the high excitement which these occasioned throughout the whole intestinal canal, feculent matter was expelled from every part of it, contraction of the colon was removed, bile was invited into the bowels, and those copious secretions were promoted, which relieved venous plethora. As the Walcheren fever at Ipswich did not appear in the acute form of the bilious fevers, described by Cleghorn, Sir John Pringle, and Lind, antimony was never added to purgatives, at least, not by me. There was too much debility and irritability of the stomach, to admit of the employment of antimonials, neither did they seem to be called for. I do not think it was an efficacious practice to confide in the use of mild laxatives. Far from thinking that drastic purgatives proved ultimately injurious by favoring relapses, as Fordyce and Gregory the elder, pretend; I have no hesitation in saying, that when they were repeated at proper intervals, they not only diminished the tendency to relapse, but carried off the congestion of the abdominal viscera, when other remedies failed; and proved the most effectual preventive of dysentery, arising from chronic inflammation of the intestines, a state that first induced diarrhœa, and always ended in that disease. In the early part of my attendance at Ipswich, I did not adopt the purgative plan with the same confidence with which I resorted to it in the end. In a great proportion of the patients I first took the charge of, dysenteric affections were the almost constant consequences of protracted fever, and generally carried the patients off; but this distressing disease, as well as diarrhœa, was far less frequent in those to whom I freely gave drastic purgatives before such affections became confirmed. In spite of the gentle means commonly resorted to for keeping the bowels open, such as an aloetic pill, rhubarb, and small doses of sulphate of magnesia, feculent matter collected in the plicæ of the intestines, and irritated them by its detention, the bowels remained torpid for want of bile to stimulate them, they became constricted in certain parts, sensibility was collected in one spot, and withdrawn from another; irritation succeeded, in short, dysentery supervened.

vened, so that one of the most important points in practice, towards the men at Ipswich, was to restore energy to the bowels and, by inducing a general excitement throughout the chylopoietic viscera, enable the bowels in particular to shake off the morbid disposition, and the torpor with which they were attacked. With this view, I administered a drastic purgative, once in six or seven days, when the body was most free from the influence of the paroxysm; while, on the intermediate days, I allowed my patients wine and cordials, sometimes with, and at others, without, the bark. Knowing the tendency of the Walcheren intermittent to terminate in a derangement of the abdominal viscera, especially of the intestines, I watched its progress closely: hence, I did not allow congestion to go on, the gall bladder to undergo ulceration from the acrid quality of the bile, the primæ viæ to become loaded with sordes, or the fever itself to become anomalous and confused from these several causes, without attempting to remove them by purgatives. I might have said that I was suffering weakness to increase, irritation, head-ach, and anorexia to continue, by not administering purgatives, for all these symptoms have repeatedly yielded to this plan of treatment. So fully am I convinced of the great utility of purging, that I have no hesitation in saying, it might be resorted to at any period of the protracted state of the fever, though bark, mercury, or any other remedy, should be habitually administered. The great indication for cathartics was evidenced in the encreasing size of the abdomen, its tenderness and hardness, cholic pains, costiveness, or its opposite state diarrhœa, and, in short, by every kind of visceral disease. If these consequences of the intermittent were not looked to at an early period, and combated by purgatives, they invariably augmented, and induced a secondary pyrexia, which intermixed itself with intermittent pyrexia, and formed a most confused and anomalous fever. Aware of the uniform tendency of this protracted intermittent, I never waited for the establishment of the affections I have mentioned, before I administered purgatives; but averted their formation, by resorting to them early. I never induced weakness by this practice, nor had I occasion in any way to regret the copious intestinal evacuations I procured from my patients. I did not give cathartics in the latter stages of the fever, where perpetual delirium, with a small trembling pulse, a black tongue, coldness of the extremities, and extreme debility were present. But if the patients were not reduced to this deplorable state, and the living powers were yet capable of carrying on the functions with tolerable energy, I have witnessed great changes for the better, upon throwing the intestinal canal into high excitement.

excitement. At one time I thought it would be more adviseable to rely upon the bark and mercurials; and, where no extensive visceral disease appeared to threaten life, to await the gradual termination of the fever, by such a plan; than to incur a risk of exciting some new action in the system, that might prove injurious. However, by watching a number of cases, conducted by the bark, mercurials, and diuretics, or those at least wherein the purgative system had not been acted up to, and comparing them with those in which drastic purges had been freely exhibited, I invariably found that those treated upon the latter plan, were rendered milder and more tractable, and ceased infinitely sooner than the others; nay, I observed that while some patients were sinking under the use of bark and mercury together, others taking purgatives and mercurials were fast regaining health.

Here I shall insert a few cases, in order for the reader to trace the advantages which were obtained by drastic purgatives. I must inform him, that in some of these he will also be able to judge of the efficacy of mercury. I do not however think it necessary to give specific cases illustrative of the good effects of mercury in coma. I treat of this amply and in a general way in some subsequent pages.

CASE I.

A soldier had paroxysms of intermittent, of a double tertian type which were one day mild, and the other day severe. The severe paroxysm generally attacked about noon, the mild one came on in the evening of the following day. Frequently the paroxysms were so much protracted, that one scarcely had come to a termination, before another commenced. At all times, indeed, the interval was confused, and attended with pyrexia. The fever had now returned under this type, for upwards of a month. The patient had always a severe pain in the head, thirst, loss of appetite, and great oppression at the præcordia. His complexion was sallow; he was dejected and drowsy. Sometimes he was seized with a slight diarrhœa, then the bowels became torpid, and he experienced wandering pains in the abdomen. Now and then he had a sensation pass through the intestinal canal, inviting him to go to stool, which he almost invariably attempted to comply with, unsuccessfully. There was a general tenderness and tension of the abdomen, and the hypochondria were extremely hard. He could not support the pressure of the hand under the ribs of either side. His pulse was generally quick in the short interval of the paroxysms, his tongue was foul, and the teeth and

and lips were covered with sordes. A small red spot occupied the centre of each cheek, he had partial perspirations, and made turbid urine. The face and legs were both œdematous, and the respiration was generally short. The patient was of a delicate form, but had always enjoyed his health until he was attacked with this fever.

October 16, ℞. Cambogiæ ℈ß. Potassæ Supertart. ʒß. fiat pulv: stat; sum. ℞. Aq: M: Pip: ʒiß. Tinct; Opii guttas xʟ fiat haust; invadente horrore sumendus.

17th, Medicine has operated very freely. Feels extremely relieved though he had syncope supervene in the paroxysm, which came on last evening. Pulse feeble. Skin dry. Abdomen is tender, and gives the sensation to the hand, of an indistinct fluctuation. Habeat Vini Rub. ʒx. quotidie. ℞. Decoct; Cinchon; ʒx. Tinct; ejusdem ʒ.ß. Acid; Vit: dil: guttas xxx. M. Sumat cochlearia quatuor magna 2dis horis: Rep; Haust; Anod; invadente horrore.

18th, Had a return of the paroxysm yesterday at noon. Is comatose; countenance dejected. Extremities cold. Pulse feeble. Abdomen not so tense or tender. Has no pyrexia. Rep; Mist. Rep; Vinum. Habeat Pil; e Submuriat: Hyd. gr. i. nocte maneque.

19th. Complains of tenderness and pains about the umbilical region, and left hypochondrium. Stomach rejects the bark. A paroxysm of ague came on last night later than usual, and has left a constant pyrexia. Has the head-ach, and complains of thirst. Rep; Pulv; Aperiens. Admoveatur Episp; Capiti.

20th, Has had several stools, well tinged with bile, and has passed scybala. Tongue white and moist. Abdomen soft and less tender. Head-ach relieved. Had no return of the paroxysm last night. Rep; Vinum. Rep; Pil; e Submuriate Hyd. nocte maneque.

21st. Has had two paroxysms since yesterday. One attacked last night, was mild, and terminated soon, the other began before the former had well subsided, and was severe. The patient continues in a partial perspiration about the præcordia. He complains of pain in the left hypochondrium. Abdomen is soft, and the œdema of the legs is subsided. Perstet in usu Pil: e Sub-muriat; Hydrarg. Rep; Vinum. Injr; Enema e Decoct; Sem; Lini..

22. Has had no return of the paroxysm, skin cool, pulse 90, countenance serene and breathing free; he feels the abdomen easy, and has had two natural stools: Rep; Submurias; Hyd. Repr; Vinum.

23. Complains of uneasiness across the chest, and has a light dry

dry cough. Bowels have acted once. Has no pyrexia, and escaped a return of paroxysm. Omitt. Vinum. Rep; Pil; e Sub-muriat; Hyd. R. Mellis Acetat. ʒiſs Tinct; Opii; g xxx.ft; Syrupus, cujus sumat cochlearia duo minima ex aqua hordeacea, urgente tussi.

24. Has had no return of the paroxysm, slept well, but complains of uneasy sensations in the right and left hypochondrium; epigastric region is inflated and tender. The spleen is considerably enlarged, and may be distinctly felt with the hand. Rep; Pulv; Aperiens.

25. Better. Has again passed scybala, feels the abdomen soft and easy, has had no return of the ague for four days, and is perfectly free from pyrexia, œdema of the face and legs is subsided, cough better, but has still a tightness across the sternum. Admov; Epispast; Sterno. Rep; Pil; e Sub-muriat; Hyd; Rep; Syrupus.

26. Complains of slight soreness of the mouth. Bowels regular, pulse 85, skin cool, cough and breathing better; can bear pressure on the abdomen. Has had no return of ague; is languid. Habeat Vin; Rub; ʒviij. quotidie. Sumat Pil; e Sub-mur; Hyd. gr. i. o. n.

27. Better. Repr. 28. Better. Repr. 29. Better. R. Acid; Nitric; ʒſs Muc; G; Arab; ʒi. Syrup. Simp; ʒiſs. Aquæ ʒxv. M. Bibat misturam hujuscemodi, partitis portionibus, quotidie. Repr; Pil; e Sub-muriat; Hyd.

30. Better. Rep. 31. Better; complains of soreness of mouth. Omittr; Submurias Hyd. Rep; Mistura Acida; Nov. 1. Better. Repr. The patient continued to improve under this treatment till the tenth of November, when he was again attacked with three or four subintrant double tertian paroxysms, followed by oppression at the chest, an irregular and feeble pulse, palpitations of the heart, a dry cough, hurried breathing, and pyrexia. He could only lie on one side, and with his body inclined forward; his face became œdematous, and he complained of an oppressive weight hanging over his chest. He made little water, and was very thirsty, and the day following became delirious. Habeat quamprimum Elaterii gr. ii. Admoveatur Epispast; Amp; Sterno. Infricr; Crur; Ung; Hyd; fort; ʒij. stat. R. Lact; Ammon: ʒiſs. Aq; Ammon; Acet; ʒii. Aquæ ʒivſs. M. Sumat cochlearia quatuor ampla 4tis. horis, postquam elaterium effectum ediderit.

Nov. 11. Breathing is easier. Pulse 110, and irregular. Pyrexia much abated. Coughs seldom; œdema of the face subsided. Rep; Ung; et Mistura. 12. Better. Breathes easier. Has no cough. Oppression at the præcordia subsided. Pulse 100. Pyrexia scarcely perceptible, at intervals

sleeps without starting. Palpitations have not returned. Rep; Mistura. Sumat Pil; e Pulv; Digitalis gr. i. bis die.

Nov. 13. Has had no stool. Skin dry and hot. Breathing not so free: coughs now and then. Repr; Elaterium. 14. Makes no complaints. Says he is much better. His breathing is evidently relieved, and he has no pyrexia. Pulse 95. Repr. Pil; e Digitali. 15. Better. Repr. 16. Skin cool. Pulse 85. Slept well, bowels regular, tongue clean, has no cough. Repr. Digitalis. The patient now went on very well for a fortnight, without experiencing any return of fever, or of the affection of the chest. He averted an approaching disorder of the bowels, and resisted for ten days a recurrence of the fever; but at the end of this time he was attacked with symptoms indicatory of effusion in the thorax. From this he recovered, and continued daily to improve in his health till the 30th Novr. when the abdomen almost on a sudden became distended with water, without any previous paroxysm of fever, or indeed of any symptom foretelling its approach. Fortunately for him, he had no return of the paroxysms, and the bowels did not manifest a tendency to a diarrhœal or dysenteric complaint.

Nov. 30. Habeat Elaterii gr. ii. stat. Dec. 1. Medicine operated very freely. Abdomen soft, and almost reduced to its natural size. There is no tenderness in any part of it, neither can any hardness be felt in either hypochondrium. Habeat Pil; e Digitalis gr. i. bis de die, Capiat etiam Potassæ Supertartrat; ʒiij. post. sing. Pilulas, ex aqua saccharo commista. Dec. 3. Better. Has made a great deal of water. Abdomen soft, and of a natural appearance. Rep; Med.

Dec. 4. Better. Rep; Med. 5. Better. Repr. 6. Better, ℞. Acid; Nitric; ʒfʒ. Aquæ ʒxv. Muc; G; Arab; Syr; Simp; āa ʒifʒ. M. sumat misturam hujuscemodi, partitis portionibus, quotidie. In this state I left this patient on my return to town, in every respect a convalescent, having apparently no visceral disease. He had not experienced a return of the paroxysms for upwards of three weeks. Of the efficacy of drastic purgatives in this case I leave to the candid reader to determine.

CASE II.

A soldier, has two fits of fever, and two indistinct intervals within the period of forty-eight hours. There is a great difference with respect to the hour of their invasion, their severity and duration. Indeed there seems to be no perfect interval, but there are obviously enough, two attacks of fever within

within the time of the above period. From the obscure and imperfect termination of one paroxysm, previous to the commencement of another, in short from the continuation of the pyrexia, the disease with which the patient is attacked, has rather more of the character of a remitting than an intermitting fever. I must, however, mention, that each paroxysm is not equally severe, and that a slight interval has now and then beamed upon the patient, but more commonly the fever has merely abated for a few hours, and kept up the character of a remitting type. Sometimes as the first paroxysm, I call that the first which is the most severe, which begins in the evening, and persists with great violence till nine or ten the next morning, and leaves the patient comatose and indifferent, even when roused, to all surrounding objects, his skin hot and his breathing short; as the paroxysm gradually declines, however, this succeeding fit advances by slow degrees, beginning when the other just commences to remit, and running on till it at length acquires its height, which happens at ten, eleven or twelve o'clock the next night, one while sooner, another later, postponing and anticipating alternately. I have seen in this very case, the slight fit invade later at each attack, while the violent fit has come on as much sooner, thus running into another period, and giving great irregularity to the type. Such was the character of this fever on my first visiting this patient; but it deviated even materially hereafter, as the subsequent part of the case will shew. The fever has recurred in this way for upwards of five weeks, and has brought on an enlargement of the spleen and liver, a general tenderness and tension of the abdomen, wandering pains in the chest, head and extremities. The patient complains of feeling acute pain under the left ribs, is always thirsty, and when he is roused from the lethargy into which he is constantly plunged, has a wild and vacant stare, answers indistinctly, and then falls again into the same comatose state, which, when left to himself, he only awakes from, by the greater tumult occasioned by delirium. In the short remissions of the fever, the patient lies composed, and though his body is hotter than natural, his extremities are cold. During the hot stage, he is restless, throws himself into various postures, and is perfectly delirious. His bowels are regular, his tongue day and hard, his legs œdematous, and pulse irregular at 120. The patient now and then vomits, and makes but little water, which is of a deep red colour. While in Walcheren, the patient had daily attacks of fever, but they subsided during the voyage. Since the day after his arrival in England, now three weeks ago, he has every

every day had an attack of fever. There seems from the paleness of his face and body, the distention of the abdomen, and œdema of the legs, to be a strong tendency in him to dropsy. His form is delicate, and he is much reduced by the long continuance of the disorder. Oct. 30. ℞. Cambogiæ ℈ß. Potassæ Supertart; ʒß. ft. Pulv. absente paroxysmo sumendus. Habeat Tinct. Opii guttas xl. ex. Aq; M: Pip; ℥iß. invadente horrore.

Oct. 31st. The medicine has operated very freely. The paroxysm returned last night, but has left a more distinct and longer interval. The abdomen is reduced, and does not seem so tender when pressed. He makes but little water, and remains insensible to surrounding objects. Habeat Pil; e Submuriat; Hyd; gr. i. nocte maneque. Admoveatur Epispast; Capiti. ℞. Aq; M; Pip.: ℥iß; Spt; Æth; Vit; Co; ʒi. Tinct. Opii guttas xxx. fiat haust. invadente horrore. sumendus. Nov. 1st, Had a return of the paroxysm yesterday at noon, which was very severe and continued till night. The cold stage lasted upwards of two hours, and the hot stage, after persisting with great violence for six hours gradually declined, but came to no critical termination. At present he has a temporary remission of symptoms, but remains comatose. Repr. Submurias Hyd; Injr; Enema; Com. Repr; Haustus.

2. Fit recurred last night, but soon subsided. Bowels regular, but complains of pain and uneasiness over the whole abdomen. Coma continues. Repr. Pulv; Aperiens.

3. Medicine has operated well. The patient passed scybala. He feels the abdomen easy and can bear it to be pressed without experiencing pain. He had a slight return of the paroxysm yesterday, but it came on in the afternoon, and subsided in the evening, so that he has now had a complete and well marked interval for fourteen hours. He is still comatose, but has a less dejected countenance. Infric; Abdom; Ungt; Hyd: fort; ʒi. Repr. Haust; Anodin.

4. The slight paroxysm did not attack till nine o'clock last night, but the severe fit began two hours earlier than usual this morning. In other respects the patient is nearly the same. Repr. Haust. Rep; Frictio cum Hyd. absente paroxysmo.

5. The patient has now had a complete apyrexy for eighteen hours. He is less comatose. His pulse is feeble, and at 90. His tongue is clean, and abdomen free from pain. Repr; Pulv; Aperiens. Repr; Alia.

6. Medicine has operated freely. The paroxysm did not return yesterday. The patient feels himself better, and now seeks

seeks to converse with those around him. His appetite returns. He can bear pressure on every part of the abdomen, but the induration and enlargement of the spleen can be distinctly felt. His breathing is free, and he is able to sit up. Habeat Pil; e Submuriat; Hyd. gr. i. o. n. Omittr; Frictio cum Hyd. Repr; Haustus.

7. A paroxysm came on earlier this morning than it has hitherto done, but it was mild. The apyrexy at the time of my visiting the ward (11 o'clock) is complete. Bowels regular, abdomen soft. Coma has totally disappeared. He has made a large quantity of water. Complains of a slight soreness of the mouth. Repr; Pulv; Aperiens cras.

8. Is much better; has had no return of the paroxysm; medicine has operated well. Repr; Haust. Anodin.

9. Much better; is able to walk about, and takes his food eagerly, abdomen soft, but right hypochondrium still hard and rather tender: has had no return of the paroxysm. Tongue clean, skin cool and soft. Sumat Cinchonæ ℈ij. 4tis horis. Repr; Pil; e Sub-muriat; Hyd. o. n. Habeat Vini Rubri ʒviii quodie. (Diet nourishing.)

10. Continues to mend. Repr; Medicamenta.

11. Continues to mend. Repr.

12. Better. Repr.

13 Skin rather dry; refuses to continue the bark, abdomen distended; bowels regular; has not had a paroxysm for more than a week. Omittr; Cinchona et Pil: e Sub-muriat; Hyd. Repr. Pulv: Aperiens.

13. Medicine has operated well; feels much better. Induration of the right hypochondrium scarcely perceptible. ℞. Pulv; Colomb: gr. x. Pulv; Zingib; gr. v. ft. Pulv. ter de die. Capiat Sub-muriat; Hyd. grʃs. o. n.

14. Stomach rejects the powder; skin cool; has had no return of the paroxysm; bowels regular. Repr; Sub-murias; Hyd. Omittr: Pulveres. ℞. Acid; Nitric; ʒʃs; Muc; G; Arab; Syr; Simp; aa. ʒiʃs Aquæ ʒxv. M. Capiat misturam hujuscemodi quotidie.

15. Continues to mend. Repr; Med.

16. Complexion becomes ruddy. Pulse 80. Sleeps well, has a good appetite, skin cool, appears to be fast recovering. Repr; Med.

17. Complains of a slight head ach; tongue foul and covered with a thick yellow crust; he rejected bile from his stomach twice this morning; abdomen soft; no induration in either hypochondrium. Habeat Pulv; Ipecac; gr. xv. statim. Omitt; Alia.

18. Complains of nausea and anorexia; tongue white, skin rather dry. ℞. Carbonat; Mag: ʒiii. Aquæ ʒviʃs. Tinct. Lavend; Co; ʒij. M. capiat cochlearia quatuor magna 4tis. horis.

The

The patient manifests no tendency to a return of the paroxysms, but he has been attacked with a slight gastric affection, which I have found to be very common in those who have been recovering from intermittent. It has often appeared to originate in the presence of bile irritating and debilitating the coats of the stomach. An emetic followed by absorbents and tonics has in general been sufficient to remove it.

19. Better. Repr.

20. Better. Repr.

21. Appetite returning, Tongue clean. Bowels regular. R. Inf; Colombæ ʒvijß. Sodæ Subcarbonat; ʒij. M. capiat cochlearia quatuor ampla bis de die.

22. Better. Repr.

23. Has no complaint to make. Abdomen soft. Pulse natural. Complexion ruddy. Acquires flesh. Repr; Mist;

24. Continues to mend. Repr.

25. Continues to mend. Repr.

26. Mends daily. Repr.

27. Discharged convalescent.

Let those who question the efficacy of drastic purgatives read this case.

CASE III.

Within each period of the fever a soldier has two paroxysms of unequal severity and duration. The fits sometimes do not exceed twelve hours, at other times they run out sixteen or seventeen hours, the one scarcely ending before another begins, hence they assume promiscuously the true and subintrant character according to circumstances and the state of the constitution at the moment of their invasion. One day, as in the simple and genuine tertian type, the paroxysm commences about noon, and terminates in twelve hours: another day, the day of return of the severe fit, the accession takes place early in the morning, the paroxysm not coming to a termination till after the expiration of eighteen or twenty hours, and then so imperfectly as to resemble a remission rather than an intermission of the fever. On the other days, those on which the mild fit occurs, the accession usually comes on in the evening, is of shorter duration, but leaves notwithstanding a less distinct interval than the severe fit, so that the fever between the accession of the mild paroxysm, and that of the accession of the severe paroxysm, really resembles a remitting febrile disorder: on the contrary, between the approach of the sharp and that of the mild fit, there is, though sometimes only for a short duration, a complete apyrexy, and hence the intermitting

intermitting character of the fever, blended and almost identified with the remitting type. Nay, I have in this very patient observed in the progress of the fever, three paroxysms within the time of each period, and as many indistinct intervals; more generally, however, this fever in running its circuit, has preserved an irregular double tertian type, one fit coming on every day, but at various hours, and evidently with greater severity every other accession.

The patient is a robust man, and was ill of the fever a fortnight before he left Walcheren. It left him during the voyage, but returned the day after his arrival in England. In the intervals, the patient, though rather comatose, is able to give a clear account of his illness. He complains in the apyrexies of having great pain in the head and in the left side which is so very tender as scarcely to bear the slightest pressure. His pulse is always accelerated, but feeble, and his bowels never regular, sometimes acting suddenly, and with great frequency, and then remaining obstinately constipated for several days together. He acquaints me that he has passed blood in his stools, and that he feels a more frequent inclination to void his excrements, than he can comply with successfully. The whole abdomen is tense, the liver and spleen evidently enlarged, and the epigastric region in particular inflated from the distension of the colon. He makes but little water, and seldom has a perspiration that extends further than the breast and arms. He has experienced palpitations of the heart, and feels frequently an oppression at the præcordia. Besides these symptoms, the patient has the lumbago, rheumatic pains, at least, such pains as very much resemble them, in the arms and shoulders, and has been frequently seized with vomiting, and a burning sensation in the bowels during the paroxysm, something like a heat which has given to this kind of fever the denomination of Assodes. Sometimes he is so restless after the violence of the paroxysm has gone by, as to be unable to remain long in the same posture, and complains of languor and faintness. I have even heard the patient complain of coldness, while the surface of his body was so hot that it was unpleasant to let the hand remain upon it. These, and other anomalies less remarkable, characterized the progress of this fever.

Oct. 25th. ℞. Cambogiæ. ℈ß. Potassæ Supertart; ʒß. fiat Pulv; stat: sum. Admov; Fotus Com; Abdom.

26th. The medicine has procured copious evacuations, and has also occasioned much bile to be rejected from the stomach. The paroxysm has returned, but with less violence. Complains of wandering pains in the abdomen, and is rather comatose.

Habeat

Habeat Sub-muriat-Hyd. gr. i. nocte maneque. R. Aq; M; Pip; ℥iſs. Sp; Æth; Vit; Co; ʒi. Tinct; Opii; guttas xl. fiat haustus, invadente horrore, sumendus. Rep; Fotus Abdom.

27. In the last period the patient has had two paroxysms, but they were milder, and the intervals they left were complete, though of short duration. Has had two stools intermixed with mucus; still complains of uneasiness in the bowels, and has a frequent inclination to go to stool without succeeding in the effort. Rep; Sub-murias Hyd. Rep; Haustus et Fotus.

28th. Had a return of the paroxysm last night, but has experienced a perfect apyrexy for several hours. Abdomen tense. Pulse 100. Tongue clean, and coma slight. Rep; Pulv; Aperiens. Rep; Haust; Anod.

29. Escaped the paroxysm yesterday. Medicine operated freely and brought away scybala. Abdomen softer and easier. Skin cool. Has no pain in the head or arms, and feels no burning heat in the viscera of the abdomen. Coma very slight. Rep; Sub-murias Hyd. Rep; Haust; Anod.

30th. Had a slight shivering last night, and subsequent pyrexia, but has now a distinct interval. Had two natural stools without tenesmal pain. Can allow the abdomen to be pressed. The spleen feels large and hard, and the epigastric region is yet distended. Rep; Sub-murias Hyd. Rep; Haust; et Fotus.

31. Escaped paroxysm. Has no coma. Pulse feeble. Bowels confined; abdomen tender. Rep; Pulv; Aperiens. Rep; Haustus.

Nov. 1st. Abdomen soft, and free from tenderness. Has had no return of the paroxysm; neither does he feel pain in his head or loins. Medicine operated very freely. Hardness is perceptible under the ribs, but the enlargement is much dimmished. Rep; Sub-murias Hyd. nocte maneque. Rep; Haust; Anodin, si opus sit. Sumat Pulv; Cinchonæ ℈ij. 4tis. horis. Habeat Vini Rubri ℥ viij. quotidie.

Nov. 2. Had a slight shivering last night, and subsequent pyrexia, which terminated for the first time in a copious perspiration, and a lateritious sediment in the urine. Abdomen is perfectly soft and free from pain. Stools natural. Skin cool. Complexion ruddy. Eyes animated. Rep; Cinchona, Sub-murias Hyd. et Haust. Anod. si opus sit.

3d. Has had no return of the paroxysm. Pulse 80. Skin cool; appetite returns. Tongue clean. Bowels regular. Rep; Med; et Vinum.

4th. Continues to mend. Rep; Omnia.

5th. Mouth tender. Omitt. Sub-murias Hyd. Rep; Cinchona et Vinum.

6th. Continues to mend. Repr.

7th. Complains of extreme oppression at the præcordia. Skin

Skin dry. Coughs frequently and is hoarse. Omit; omnia. Habeat Pulv; Aperient; ut antea. Imponat; Epispast: Mag: Sterno.

8th. Medicine operated freely. Still coughs frequently. Skin dry. Tongue white. Pulse quick. ℞. Lact; Ammon; Aq; Ammon; Acet. aa ℥iſs. Aquæ ℥v. m. capiat cochlearia quatuor ampla 4tis horis. ℞. Sub-muriat; Hyd. gr; i. Pulv; Scillæ gr; ß. Cons; Cynosb. q; s. fiat pilula bis de die sumenda.

9th. Breathing free. Skin moist. Pulse 85. Coughs but seldom. Had a slight accession of fever last night, preceded by shivering. Repr; Med.

10th. Better. Repr.

11th. Is perfectly free from cough, and oppression at the præcordia. Skin cool. Abdomen uneasy and tense. Repr. Pulv; Aperiens.

12th. Better. Has no fever. Abdomen soft. No hardness is now perceptible in either hypochondrium. Is languid. Repr. Cinchona; et Sub-murias Hyd.

13th. Better. Repr.

14th. Better. Repr. The patient now daily improved in his health, but on the 25th, had a hæmorrhage from the rectum without being preceded or accompanied with any uneasy sensation. Capiat Magnes; Vit. ℥i. bis de die. Bibat e Decocto Sem: Lini. ℞. Sulphatis Zinci gr. i. Saponis gr. ii. fiat pilula ter de die sumenda.

26th. A slight hæmorrhage has returned. In other respects the patient seems well. Repr; Med.

27th. Bowels open. Hæmorrhage has ceased. Health continues to improve. Repr; Med.

28th. Better. Repr.

29th. Better. Repr.

30th. Better. Habeat Pulv; Cinchon. ℈ij. ter de die.

Dec. 1st. Better. Repr. 2d. Better. Repr.

5th. Discharged convalescent.

Let those who doubt of the efficacy of drastic purgatives read this case with attention.

CASE IV.

A soldier has a paroxysm of fever that invades one day about eleven in the morning and the next day about five or six o'clock in the evening, in short intermittent of the double tertian type, which in this patient performs its two revolutions within the time of each period. The two fits however are by no means regular with respect to the time of their attack, nor are their intervals equally distinct and long, after the termination of

each paroxysm. Sometimes the severest paroxysm occurs in the morning, and exceeds the twelve hours in going through its various stages. On the contrary, it occasionally happens that the most violent fit takes place in the evening, scarcely coming to its termination till another period is about to commence. In general the longest interval occurs after the severest paroxysm, which lasts about sixteen hours: the interval that succeeds the mild fit is very indistinct, and has more the appearance of remission than intermission.

Having defined the type of the intermittent with which this patient is attacked, I shall detail the other symptoms which are present. He is completely absorbed in coma during the interval, and if left to himself would neither seek for food, nor hold the least communication with persons around him. I found his legs œdematous, and his abdomen tense and hard. When I pressed the hypochondria I gave him pain, which roused him from his lethargy. The spleen and liver, as usual, were both enlarged, and could be distinctly perceived to occupy a larger part of the abdomen than natural. The patient had been attacked with dysentery only a few days before he was committed to my care. He was a perpetual prey to a severe tenesmal affection, to gripes, and wandering pains in the abdomen. He moaned frequently, and complained of being faint. His pulse was very feeble, and he made but little water. He had a slight cough, and was occasionally flushed in the face. As in all the other men attacked with the Walcheren fever, there was a remarkable despondency, and a greater degree of debility in the present instance than I had commonly met with. The general paleness of the skin, bloated appearance of the countenance, and œdema of the legs also indicated approaching dropsy. Previous to the attack of this disorder the patient was a healthy man. He is of a robust form.

Oct. 30th. ℞. Cambogiæ ℈ß. Potassæ Supertart; ʒß. fiat Pulv; stat. sum. ℞. Aq; M; Pip. ℥ifs. Sp; Æth; Vit; Co; ʒi. Tinct; Opii. guttas xl. ft. haust. invadente horore sumendus.

31st. Medicine has operated freely. Had only a slight shivering last night. Complains of great pain in the abdomen. Is extremely low, and completely comatose. Pulse feeble. Habeat Vini Rub. ℥x. quotidie. Infric; Crur; Ung; Hyd; fort; ʒi. stat. Sumat Magnes; Vit. ℈i. 4tis horis. Repr. Haust; Anod.

Nov. 1st. Has had several stools intermixed with blood and mucus. Continues comatose. Pulse feeble. Had a return of the paroxysm yesterday, but it was less severe. Repr; Omnia.

2nd. Had a slight shivering last night. Pulse feeble. Coma abated.

abated. The patient without being solicited, seeks to give an account of himself. He passed scybala intermixed with blood, three or four times in the course of the night. Abdomen hard and uneasy. Repr; Omnia. Admov; Fotus Abdomini.

3. Escaped the paroxysm yesterday. Is not at all comatose. Complains of pain in the head and loins. Pulse 90. Skin dry and rather hot. Tongue white. Has passed more scybala intermixed with blood and mucus. Abdomen still tense. Repr; Mag ; Vit. Fotus, et Haustus. Omittatur Ungt. Abradatur capillitium et abluatur caput mane et vespere aqua tepida.

4th. Had a slight recurrence of the paroxysm. Has been severely griped. Head easy. He is free from coma. Tongue clean. Habeat Ol. Ricini ʒiij. bis de die. Habeat Pil; e Submuriat; Hyd: gr; i. o. n. Repr; Fotus; et Vinum.

5th. Feels better. Abdomen soft. Has had two or three natural stools. Had no return of the paroxysm. Repr; Omnia.

6th. Better. Repr; Omnia.

7th. Stools natural. Skin cool. Pulse 85. Œdema of the legs subsided. Has escaped the paroxysm for several days. Repr; Pil.

8th. Complains of great uneasiness in the right and left hypochondrium. Abdomen tense, but stools natural. Dropsical appearances entirely gone off. Repr: Pulv; Aperiens. Repr; Fotus Abdomini, et Haust; Anodin.

9th Medicine operated well. Has no pain in the abdomen. Skin cool. Pulse 80. Complexion better. Repr; Vinum, et Pil; ex Hyd.

10th. Complains of languor and faintness. Abdomen soft, and hypochondria less tender when touched. Repr; Pil, et Vinum. ℞. Pulv. Colomb. ƏſS. Zingib. gr. v. fiat Pulv. ter de die sumendus.

11th. Better. Repr.

12th. Better. Repr.

13th. Better. Repr.

14th. Had a paroxysm last night, and another this morning, stools natural. Abdomen soft. Repr; Pil; ex Hyd. Sumat Pulv; Cinchon. ʒſs. ter de die.

15th. Skin cool. Abdomen soft. Bowels regular. Repr.

16th. Better. Repr.

17th. Better. Repr.

18th. Better. Repr.

19th. Abdomen rather tense, and left side painful. Has had no return of the paroxysm. Repr; Pulv; Aperiens.

20th. Medicine has operated freely. Feels much better. Repr; Cinchona, et Pil.

21st.

21st. Better. Repr.

22d. Continues to mend. Repr.

23d. Objects to the bark. R. Sulphatis Cupri. gr. ß. Mic; Pan; q. s. fiat Pil. bis de die sumenda.

24th. Continues to mend. Repr.

25th. Going on well. Repr.

26th. Abdomen perfectly soft, and free from pain. Skin cool. Complexion no longer morbid, but ruddy. Bowels regular. Appetite good. Repr.

27th. Continues to mend. Repr.

28th. Continues to mend. Repr.

29th. Continues to mend. Repr. Discharged convalescent.

Remark.

The good effects of drastic purging are very evident in this case. Indeed the efficacy of mercury is also well confirmed in removing coma, and in contributing to reduce the extensive visceral disease with which this patient was oppressed.

CASE V.

A soldier, aged 25, has intermittent of a double tertian type which differs at the return of the paroxysms as to its violence and duration, and also with regard to the interval it leaves. The fever attacks thus: On one evening, say Thursday, a fit comes on, of greater or less severity, and continues till eight o'clock or longer the following morning. Towards the middle of the same day, Friday, another paroxysm begins, more severe than the former, and does not terminate till one or two o'clock the next morning; from which time there is a complete interval till Saturday evening, when at some uncertain hour a new period commences, by the invasion of a slight pyrexia, which, with some little variation, proceeds and terminates as that which invaded on Thursday evening. The paroxysms are sometimes accompanied with delirium, at others with violent headach, and vomiting. When they subside he passes from a delirious to a comatose state, which continues during the entire interval. His countenance is particularly dejected and sallow, and the pupils are dilated. There is a dullness of the eye, and he moreover sees indistinctly. Even when aroused from his lethargy, he still remains indifferent to his situation, taking but little notice of those around them. He never asks for food, and involuntarily passes his stools in bed. His tongue and teeth are covered with sordes. His body is at times very cold, and only becomes warm when the hot stage of the paroxysm supervenes. He is totally unable to support himself erect in bed, sinking immediately into his

his former position when the person holding him up, withdraws his support. I did not give him any pain by pressing my hand upon his abdomen, which possessed its natural softness. His tonguc was hard and dry, his pulse fecble, at 115. The heat of his body is less than natural. The patient is a delicate man, and much emaciated.

October 15. Infricr; Crur; Ung; Hyd; fort; ʒi. stat. Admoveatur Episp; Capiti. Habeat Vini Rub. ʒviij. quotidie.

16. Had a paroxysm yesterday cvening, which has scarcely subsided. He has pyrexia, but no moisture on thc skin. Coma is intense, and countenance much dejected.

Visit in the evening. Was attacked with a subintrant paroxysm at elcven o'clock this morning, which is accompanied with vomiting, great agitation of the body, and delirium of a low muttering kind. Still passes his stools involuntarily, which are black, and intcrmixed with mucus. Rep; Ungt. et Vinum. ℞. Pulv; Jalapæ gr. xv. Sub-muriat; Hyd; gr. duo. fiat Pulv; statim sumcndus.

17. Last paroxysm of the fever which commenced yesterday morning was protracted till eight o'clock this morning. The skin is now cool, and he is less comatose. His pulse is at 100. Medicine has operated several times. Abdomen is soft. Rep; Ungt. et Vinum.

Visit in the evening. Has had an interval of five hours only. At one o'clock a frcsh period of the fever commenced, but it has already terminated. Sordes gradually separatcs from the tonguc and teeth.

18. The paroxysm has anticipated two hours. It began at eight o'clock this morning. He is now in the height of the hot fit, and is delirious.

Visit in the evening. Coma much abated. Pulse 100. Skin cool. Gives distinct answers whcn spokcn to. Does not pass his stools involuntarily. Rep; Ungt. Rep; Vinum.

19. Intcrval continues distinct. Skin cool. Coma has disappcared. Pulse 100. Bowels regular. Complains of slight soreness of thc mouth. Has a desire for food. Body of an uniform temperature. Omittatur Ungt. Rep; Vinum.

Visit in thc evening. Has had a distinct interval of twcnty-four hours. At six o'clock this evcning had symptoms of a fresh attack of fever, but the cold stage was of very short duration, and the subsequent pyrcxia mild.

20. Complains of soreness of the mouth. Has had no double tcrtian paroxysm to day. Is able to sit up, has a lively countcnance, and takes his food cagerly. His pulsc is quick and irritablc, such as is usually occasioned by the action of

of mercury. Sumat Mag; Vit. ʒſs. bis de die. Repr; Vinum.

Visit in the evening. Has had no return of the paroxysm. Is not comatose.

21. Slight ptyalism. Skin rather hot. Bowels regular. Has had no return of the paroxysm. Repr. Vinum.

22. Is much better. Repr. Vinum. 23. Complains of uneasiness about the umbilcial region, and of soreness in the right hypochondrium. Skin cool. Ptyalism very slight. ℞ : Cambogiæ ϑſs. Potassæ Supertart. ʒſs fiat Pulv; stat. sum. Repr; Vinum.

23d. Medicine has operated freely. Has no pain or tenderness of the abdomen. Pulse 90. Skin cool. Has a lively countenance, and is totally free from coma. Habeat Pulv; Cinchonæ ϑii. 4tis horis. Repr. Vinum, ad uncias decem.

24th. Soreness of the mouth continues, but ptyalism subsides. Skin cool. Complexion ruddy. Has a good appetite. Repr; Cinchona, et Vinum.

25th. Better. Repr; omnia.

26th. Better. Repr; omnia.

27th. Better. Repr.

28th. Better. Repr.

29th. Better. Repr.

30th. Better. Repr.

31st. Discharged to a convalescent depôt.

Remark.

This is one of those desperate cases in which a prompt action of mercury produced a rapid amendment. By tracing back the daily state of the patient, it will appear that the first effects resulting from its employment were a removal of coma, a gradual separation of sordes from the tongue and teeth, a return of sensibility to external objects, a lively appearance of the countenance, and the distribution of natural warmth over the body. These changes were soon followed by all those symptoms which announced returning health. It may, to some persons, seem an inconsistent practice to heighten, by the use of wine, the irritation of the system occasioned by mercury. In justification of this, I shall observe, that by diffusible stimuli, the extreme languor and debility connected with coma were always well combated, but which, if allowed to persevere, uniformly made the recovery of the patient more uncertain; moreover, that the additional excitement occasioned by wine never induced that excess of irritation which became dangerous, nor even an irritation that did not yield to cold affusion or laxatives. Indeed, where ptyalism was moderate, and the system languid, as in the above

above case, wine was always serviceable. It was better in every instance, where death stared you in the face, to incur the risk of high excitement by attacking him daringly, than to allow effusion in the brain to increase, or, to use Dr. Cullen's phraseology, a state of collapse of the cerebral system, to ensue, which, if not promptly averted, soon carries the patient off.

CASE VI.

A soldier had a paroxysm of intermittent every day, which varied with respect to the hour of its invasion, the time it continued, and the violence of the symptoms. One day it attacked about noon, and sometimes exceeded twelve hours. before the solution of it took place; the next day the fit came on towards evening, and was generally milder and sooner came to a termination: the following day the paroxysm began about noon, and anticipated an hour recurring the next day again in the evening. In this way was the patient attacked daily for three weeks. He was very feeble and emaciated; complaining in the intervals, of pain in the head, anorexia, soreness of the abdomen, and pain in the left hypochondrium. His bowels were generally confined, his pulse feeble, and his skin always dry. His complexion was sallow, his legs were œdematous, he had a dejected look, and remained comatose for three or four hours after the termination of the fit. The cold stage of the paroxysm which invaded at noon lasted two hours, that which attacked in the evening was only of an hour's duration. The hot stage sometimes continued six or seven hours, never terminating in crisis, by a copious perspiration or a large flow of urine. He was delirious in the hot fit, and when spoken to in the interval gave indistinct answers, and seemed very indifferent to his situation. He made but little water, which was generally limpid. He had a slight diarrhœa in Walcheren. He was a robust man previous to the invasion of this fever, and had always enjoyed good health.

October 15th. R. Cambogiæ gr. x. Potassæ Supertart. ʒfs. ft. Pulv. stat. sum. Sumat Ext; Opii grana duo, invadente horrore.

16th. Medicine had a very full effect. Had a return of the paroxysm last night, but feels better this morning. Skin cool. Abdomen soft. Pulse feeble. Repr; Opium. Sumat Pil; e Submuriat; Hyd; gr. i. nocte maneque.

17th. Had a return of the paroxysm yesterday, but it was milder, and of shorter duration. Complains of a pain in the head. Skin dry. Abdomen rather tense. Pulse feeble. Repr; opium

Opium. Repr; Sub-murias Hyd. Repr; Pulv; cum. Gambogia. cras.

18th. Had no return of the paroxysm last night. Complains of the headach.

Visit in the evening. Medicine has operated very freely. Feels much better. Abdomen soft. Has had no paroxysm to day. Œdema of the legs has disappeared. Skin is cool: but he still complains of pain in the head. Applic; Episp; pone aures. Repr; Sub-murias Hyd. Sumat Pulv; Cinchonæ scrupulos duos secundis horis. Repr; Ext; Opii. invadente horrore.

19th. Has escaped the paroxysm again. Head is relieved. Slept very well, and finds his appetite returning. Abdomen soft and free from pain. Repr; Ext; Opii. Pil e Sub-muriat; Hyd. et Pulv; Cinchonæ.

20th. Had a light shivering last night succeeded by pyrexia, which continued for five or six hours. According to his own account he feels a particular lassitude, yet has a more animated countenance; has no œdema of the legs, and feels a frequent inclination to take food. His pulse is feeble, tongue rather white, but skin perfectly cool. Repr; Pulv; Aperiens.

21st. Medicine has operated freely. Has had no return of the paroxysm. Abdomen is soft. When I pressed the hypochondria, the patient experienced no sensation of uneasiness. He complains of debility, but has a good appetite and enjoys refreshing sleep. Repr; Pil; e Sub-muriat; Hyd. Repr; Cinchona.

22d. Seems much better. Repr; Med. Habeat Vin. Rub. ℥viij. quotidie.

23d. Bowels regular. Abdomen soft and free from pain. Has no headach, and has had no return of ague. Repr; Med. Repr; Vinum.

24th. Better. Bowels rather irritable. Omittr. Pil; e Sub-muriat; Hyd. Habeat P; Ipec; Co. ℈ss. h. s. Repr; Cortex, et Vinum.

25th. Better. Repr; Omnia.

26th. Makes no complaints. Feels himself strong, and wishes to be discharged from the hospital. Habeat Pil e. Sulphat; Cupri gr. ss. bis de die.

27th. Continues to mend. Repr.

28th. Continues mending. Repr.

29th. Continues mending. Repr.

30th. Continues mending.

31st. Discharged convalescent.

It was in vain that we looked for a successful termination of the Walcheren intermittent from the administration of bark, or mercury alone: nay, I might add by purgatives; for it was necessary at times to resort to all of them to procure even an abatement

abatement of symptoms. The effects of purging were not merely confined to the relief of congestion of the abdominal viscera, and of the pyrexia which arose from that cause. Observation taught me that their influence was far more extensive, and that their operation wrought a change in the universal frame, whereby its depraved bias was corrected, and the succession of morbid phenomena broken in upon. The bark frequentiy occasioned diarrhœa, distensions and pains of the abdomen, thirst and pyrexia, all which symptoms, not excepting the diarrhœa, yielded to a cathartic. The sick at Ipswich as the dissections shew, were very subject to chronic inflammation of the intestines, which appeared to increase with every paroxysm, and at length to induce diarrhœa and dysentery, complaints that were most successfully treated by drastic purges administered in the beginning. Doubts arose in my mind whether the bark could permanently stop a recurrence of the paroxysms, while visceral disease existed. Thus then deprived of its power, for I afterwards found this conjecture realized, I had to attempt the reduction of the enlargements of the viscera by mercurials and purgatives, which often so well succeeded as to prepare the way for the bark to act with decided benefit. Nevertheless when the bark could be combined with our other plan, it was all the better, for as every paroxysm produced a shock upon, and left consequences in the constitution that it was little able to surmount, it was of high importance to prevent a recurrence that brought accumulated disease and sufferings on the patient. Cleghorn indeed says, in allusion to the impropriety of permitting the fever to continue where the bowels are obstructed: "And therefore I have commonly found it expedient in persons troubled with hard overgrown livers and spleens, to prevent the repetition of long, severe burning paroxysms, lest worst consequences should ensue. After the sick recovered their strength, I endeavoured to reduce the swellings of the belly, by the use of saponaceous gum pills, washed down with an infusion of juniper berries." If a paroxysm of unusual severity occurred, leaving œdema of the face, yellowness of the complexion, shortness of breathing, and distention of the abdomen, I always resorted to a drastic purgative with the best effects. I have thus sometimes treated the severe pain that comes on in the loins after a violent paroxysm, and the pains in the limbs with success. Sydenham indeed mentions, that lumbar pain in the intermittent he had to treat, was increased by evacuations, but the very opposite of this occurred to me in my practice at Ipswich, I have yet to take notice of

the efficacy of purging in intermittent combined with dropsy. I have given the bark alone in these cases after the example of Stork, but never with advantage, unless mercurials and purgatives were interposed. Lind says he administered the bark in dropsy succeeding intermittent, with beneficial effects; but I firmly believe with Clarke, that when agues by their long continuance have brought on visceral obstructions combined with jaundice and dropsy, threatening a fatal termination, nothing but a judicious course of mercury can snatch the patient from destruction. Purgatives were much to be relied upon in the cases of effusion into the cavities of the abdomen and chest. By the general excitement purgatives produced over the whole system, they promoted a more uniform circulation of the blood on the surface, and gave renewed energy to the absorbent system. In most dropsical affections, with the exception of hydrothorax, purgatives were followed up by steel, the bark or other tonics, or their administration alternated with small doses of mercury. I shall conclude my observations on purgative medicines by remarking that where they had been resorted to at proper intervals, destruction never seemed so certain as where they had been delayed or omitted. The most propitious moment for employing medicines of this class was previous to the formation of viseeral disease, or when it had only acquired small extent, and that the tension and fullness of the epigastric and abdominal regions were symptomatic of incipient, rather than confirmed obstructions of the liver and spleen; of chronic inflammation and inflation of the intestines, than of the advanced stages of dysentery. Nevertheless, as I have already observed, they were conspicuously serviceable in all the numerous affections of the abdominal viscera, and the complicated consequences of the Walcheren fever.

By this treatment, symptoms were so much abated, as to enable other remedies to produce a full effect upon the system. Of all those resorted to in the interval for stopping the fit, bark was the most powerful, next acids, and lastly, astringents and bitters. Of the efficacy of bark in recent disease, or even where the organs of the abdomen are not essentially injured, there cannot be the least doubt, but I shall mention an objection that has been started against it, which if well founded ought to be seriously considered before we have recourse to it. Once it was thought, and I believe still is, by some practitioners, that bark is apt to produce obstructions of the liver and spleen, dropsy and dysentery, especially when it is employed in the second or third interval of the fever. It is however with much greater propriety remarked by the most respectable authorities,

authorities, that the fever and not the remedy is the cause of these obstinate diseases. Dr. Millar observes, that the bark is the best preventive of them, since what stops a recurrence of the paroxysms, averts the obstructions which are the consequence of them. Dr. Jackson too, amongst other writers, mentions that he found these affections most common, where the bark had been sparingly made use of. Moreover, Lind remarks, that where from particular circumstances, the bark could not be administered, patients were attacked with jaundice and dropsy, and that no harm ever arose from its early exhibition. Cleghorn says, "sometimes indeed extreme weakness, or some formidable symptom obliged me to have recourse to it in the second period of the fever; but I never chose to give it before the third, nor to delay it after the fourth, in all cases of any consequence, provided there was a proper interval for its administration." Sydenham never found any mischief produced by it, so that we may conclude from these great authorities, no mischievous consequence does arise from its early employment, and that it may be persisted in even where slight visceral disease exists, without the least fear of its augmenting it. But I wish here to be understood, that although I agree with these writers that it does not produce visceral disease, yet I have known it repeatedly given in vain with a view to stop a recurrence of paroxysms, where the viscera had become obstructed, and I have, moreover, observed it keep up pyrexia, occasion distensions of the abdomen similar to tympanites, and give rise to numerous uneasy sensations in the chylopoietic viscera, especially in the intestines. Neither has its exhibition appeared to me to be serviceable when the primæ viæ were weakened and irritable, where the biliary secretion was suppressed, or where the intestines were either so torpid as not to act without the aid of purgatives, or so irritable as to manifest a strong tendency to diarrhœa. Yet Cleghorn says upon this subject, "I was a long time in doubt whether the bark might be given without prejudice, while the first passages were full of vicious humours, and the bowels were inflamed, or affected with inveterate obstructions; but I have now good reason for asserting, that in these very cases this medicine is of the greatest use; as it averts sudden death, and gains us time to join with it, other means towards completing a cure. For the quantity of acrimonious contents in the primæ viæ is the effect of the alteration produced in the circulating fluids by the fever; and the longer this continues, the more impurities will be accumulated, till at last they bring on a violent cholera morbus, and perhaps make their way through the lacteals into the habit,

habit; and there occasion very fatal effects; all which might have been prevented by the use of the bark, which removes the cause of these impurities by putting a stop to the fever; and by corroborating the solids, enables them to throw off the excrementitious fluids by the proper emunctories." Bark, I think, contributed to prevent that watery state of the blood from taking place, which terminated in dropsy, but it had not the power of protecting the constitution from relapses of the paroxysm, though it were persisted in for three weeks after the disappearance of fever. Yet Bursarius mentions, that he gave the bark alone, to a person with a tedious quartan, that frequently relapsed and terminated in dropsy, and that it completely removed them both. The sick at Ipswich had a remarkable repugnance to this drug, from having, I presume, taken it in very large quantities in Walcheren, partly from the irritability and weakness of their stomachs, and in some men from idiosyncracy. In fair cases for giving it in full doses, I generally directed it to be taken every two hours in the interval, and a double dose just before the invasion of the cold fit. In this respect I deviated from Sydenham and Fordyce, who with a particular apprehension discountenance the use of bark at the approach of the cold stage. Success generally attended that mode of exhibiting the bark when circumstances were in favour of its effectual operation; but it more generally happened that perfect intervals, freedom from pain and visceral disease were, during the administration of this medicine, suddenly broken in upon by the appearance of some anomalous symptoms, diarrhœa, headachs and pyrexia, which demanded other remedies; so that, when there was the greatest prospect of putting a stop to the recurrence of the paroxysms, the bark was obliged to be laid aside, and a new plan adopted. In short, it rarely could be persisted in regularly, and in those doses which are capable of fortifying the system against a return of fever. I made trial of it where the prostration of strength was considerable, coma profound, the pulse feeble, and the tongue hard and brown, but never observed it to be beneficial. I have succeeded in stopping the paroxysms now and then in patients thus situated, but I never could rouse them from their lethargy by this practice, nor make any further step towards amendment, than suspending the fit. However, it was of importance to accomplish thus much, as other symptoms could be easily combated by more appropriate remedies. The bark was a good auxiliary when alternated with purgatives, or combined with mercurials, and oftener thus succeeded in preventing relapses, than when given alone.

After

After having repeated drastic purgatives at proper intervals, the remaining tension and hardness of the abdomen, yellowness of the skin, and œdema of the feet were frequently removed by administering bark with small doses of calomel. The attestations of Gregory, Fordyce, and Jackson, in favor of the free use of this medicine before the formation of visceral disease, were sufficient to induce me to recur to it on every fair opportunity; but from the various circumstances which supervened to oppose the free use of it internally, I was induced to make trial of it externally to the skin, when the deranged state of the functions of the stomach required particular remedies; or at least, a respite from the operation of medicines. I generally directed half an ounce or an ounce of the powder to be mixed with three or four ounces of alcohol, and rubbed into the body. Physicians have observed, that they have been able to stop quartans of considerable standing by immersing the legs in a bath of the decoction of bark. Another way of stopping the paroxysm is by putting bark between linen, and applying it warm to the pit of the stomach, taking care to renew it from time to time as it grows cold, but the plan I adopted was to cover the flannel waistcoats of the men with a thick layer of the bark, a part of which I also had forced into the texture of the flannel. I had only faith in rubbing it well into the skin, and by no means implicit confidence even in this mode of applying it. The frequency of thus employing bark in a great many cases, made a prominent part of my practice which I ought to expatiate upon. The efficacy of bark being so well known in stopping the paroxysms of intermittent when taken into the stomach, it may appear to some physicians an attempt to attract popularity, rather than to extend the mode of employing a valuable medicine, when I endeavour to make the cutaneous organ the medium through which I impart its action to the system. In reply to such persons, if any there be, I shall observe that I am not ambitious of arrogating to myself the least notoriety, for having employed bark by friction; and that it is not a darling child whose weakness I should disdain to acknowledge, if found incompetent to the accomplishment of the work that I deemed to be within the sphere of its powers. Although my faith may not be great with respect to the efficacy of bark applied externally, yet, if it be found under particular circumstances of the constitutionand irritability of the stomach, to succeed in stopping a recurrence of the paroxysms for a certain time merely, we ought gladly to add it to the modes of cure we employ for the relief of our patients. I do not pledge myself to lay down the modus operandi of bark externally applied to the system. I think it probable that an action is excited

excited by it on the cutaneous nerves, which is communicated to the brain, and then by a reflected operation imparted to the solid fibre, enabling it to promote the circulation of the blood, to remove venous plethora, and to restore the healthy actions of the system. If bark, taken into the stomach, acts immediately upon the nerves of this organ, in like manner may it when applied to the surface act on the nerves of this part; nay, some particles of its ultimate elements may be taken up by the skin, and through the absorbents made to act upon the irritable fibre itself, by direct contact.

I augured well of this mode of exhibiting bark by having found it thus employed with success in children, from having observed a bath with a decoction of it useful, and from having noticed the benefit which men derived from wearing flannel waistcoats covered with the powder. The inducements for making trial of it by friction, were the irritability of the stomach, which rejected bark as soon as it was swallowed, the aversion which the soldiers had to take it in substance, its frequent failure, and the evasions attempted by the sick to prevent it from producing its usual effects. But friction with bark became still more desireable when its internal exhibition clashed with other remedies which so often became necessary for the treatment of particular affections of the primæ viæ and numerous anomalous symptoms.

I have repeatedly found that bark employed by friction has completely succeeded after the third or fourth rubbing, in stopping a recurrence of the paroxysm of the double tertian type for several successive days, at the end of which constant pyrexia has come on, the patient has complained of thirst, a slight headach, and the pulse has been accelerated. I thought I perceived intermittent change into a slight continued fever of short duration, which broke the morbid association, and removed the disposition to a return of the paroxysms for a week or a fortnight; when, as in every case of the internal exhibition of bark, the paroxysms recurred, no means proving competent to the eradication of the fever, while visceral obstruction existed, and the constitution yet suffered from debility, and a morbid bias. The pyrexia to which I have alluded, was not the uniform consequence of bark friction. When it did occur it never became violent: but I frequently could succeed in preventing its invasion by administering some tonic medicine, such as the nitric acid, at the time I employed the bark externally. The febrile state I am speaking of was exactly similar to that I have observed supervene in the administration of the sulphate of copper to stop a recurrence of the paroxysms before

fore the interval has been complete, the body cool, and visceral disease surmounted. Indeed the same thing occurred from the bark given inwardly: so that to ensure benefit from either of these valuable remedies, it was necessary for the intervals to be distinct, and the abdominal viscera free from obstruction.

In recent cases of intermittent I did not give the bark till the interval became well marked. Not, as Sydenham remarks, "antequam morbus suo se marte aliquantis per protiverit." It does not however appear that this cautious conduct is thought necessary by more modern practitioners. "Multi," says Heberden, "sibi fingunt nescio quæ pericula, si cortex prius sumatur, quam febris ex toto decesserit: cui vano timori consequens est, ut magno suo detrimento, nimis diu cunctentur hoc uti remedio. Attamen, nisi fallor cortex vel in media accessione devoratus, non aliter noceret quam quod ventriculus eo tempore imbecillior posset eum respuere, unde nausea atque vomitus æger fatigatus ab eodem medicamento postea abhorreret."

In allusion to agues affecting persons of a lax habit of body, and poor thin blood, and when a wet atmosphere prevails, Huxham says, "under such circumstances the Cortex of Peru, however good and carefully chosen, frequently proves ineffectual, unless assisted with alexipharmics, as Rad. Serpentar. Virgin. Contrayerv. Myrrh, Camphor, &c. After four or five paroxysms warm chalybeates may be added with very great success. But never be too hasty in giving the bark or chalybeates, where the patient hath a yellow cast of the countenance,* a tense abdomen, and a very costive habit of body. In which case, mercurials, saponaceous deobstruents with rhubarbs, aloetics, regenerate or soluble tartar should be premised: nay, they may in some cases be very conveniently joined with the bark." In general I found that bark in proper cases for its employment was more effectual when assisted in its operation by opium, which not only gave greater efficacy to it, but obviated nausea, vomiting, pains in the limbs, and headach, which symptoms were not only frequent in intermittent, but sometimes urgent. I approve of Dr. Clarke's method of giving bark before the paroxysm,

* Cleghorn here remarks, when there is an icteritious colour in the eyes, we are likewise told that the cortex should not be administered, though in my opinion it is for the most part dangerous to delay it, after the first appearance of that symptom; which is often succeeded by a yellowness of the whole body, arising in this as well as in other malignant fevers from a total corruption, or gangrenous disposition of the mass of blood, and is too frequently the harbinger of death.

and

and opium in it. He gave two drachms of bark an hour or two before the fit, an opiate at the approach of the hot stage, and two drachms of bark again when the sweat flowed. I did not give the bark in such large doses, but I administered it at the same periods, and apparently with as much benefit as if it had been regularly persisted in during the whole interval. It was often of service to combine stimuli, such as camphor and æther, with the bark, but it was more commonly brought to operate with effect, when it failed singly, by interposing purgatives, or putting the patient under a slight course of mercury. Dr. Clarke observed, that when agues had become tedious and obstinate, so as to resist the bark, that a few doses of calomel with opium made the disease yield to a small quantity of it when resumed, even in those cases where no visceral disease existed. But if any gastric affection was combined with the intermittent at Ipswich, not any of these medicines availed. "Cortex," says Heberden, "quanquam ritè sumtus, interdum parum efficax est: quo in casu suspicio erit ventriculum sordibus onustum vim remedii impedire. Itaque vomere cogere oportet: quo facto febris raro non cedit. Quod si redire perseveret, confugiendum est ad flores chamœmeli, quorum contritorum scrupulus dandus est loco drachmæ cinchonæ, et ad idem præscriptum repetendus. Hos flores sic sumtos semel atque iterum profecisse expertus sum." I cannot say that any bitter proved so efficacious with me as columba. Where the bark disagreed, this has frequently restored the tone of the stomach, and even prevented a return of the paroxysm when every other medicine has failed. The place of the bark was often supplied by nitric acid and preparations of iron, where the sole indication was to restore strength, but in general it was better to prescribe a remedy for this purpose that had a specific effect upon the disease, and therefore bark was always to be preferred to every other medicine when no symptom prohibited its use. I frequently found it necessary to allow wine, nourishing diet, and various stimuli while patients were taking bark, for such was the debility of the system in many instances, that the most invigorating plan was called for to obviate further weakness. A decoction of the snake root, aromatics, and the volatile alkali, were in turn combined with the bark. If the stomach were weak and languid, I gave the cayenne pepper with a decoction of the bark, but wine and a nourishing diet were far more serviceable than medicines singly or jointly administered without their seasonable interposition.

Having dwelt at some length upon the use of purgatives which

of

afforded the most effectual means of combating the fever of Walcheren in its protracted state, then examined the advantages and ill effects resulting from the employment of bark, and set forth the circumstances under which its administration was inefficacious or improper, I shall next advert to that remedy, which, when the above modes of treatment proved unavailing, had the power of changing the character of the disease, rendering it milder and more tractable, I may add, of removing it in its worst stages, as when complicated with visceral obstruction, and with organic derangement of parts. When intermittent had been of long standing, and had made the constitution less favourable than usual to the action of the cortex; or by its extensive ravages on the viscera, had occasioned organic changes in them, which did not yield to its administration; the patient was put upon a course of mercury, which was continued for weeks, or occasionally suspended, and again had recourse to, according to the obstinacy of the disease, and the benefit that was derived from its employment. As the fever had entailed upon the major part of the sick at Ipswich, universal obstructions of the viscera of the abdomen, particularly of the spleen and liver, jaundice and dropsies, it became necessary sooner or later to call in the aid of mercury, for without it in greater or smaller quantities, the patient stood but a poor chance of regaining his health. It was very pleasing to find that a remedy like this was in our hands for combating with success the extensive ravages of a disease that were fast precipitating the patient to his tomb. In numerous instances, mercury made the most obstinate obstructions yield, and gave so mild an aspect to the original disorder, as to make it amenable to the action of the cortex, and ultimately cease under the influence of this its known specific. It will appear in the course of my remarks upon this medicine, that the greatest benefit accrued from it when it was slowly conveyed into the system, and there suffered to effect a gradual change in it, though it frequently operated under certain circumstances in an advantageous way, when salivation was quickly induced by its sudden and extensive introduction into the habit.

The vague terms of pushing the mercury, giving the bark, or exhibiting drastic purges are fraught with incalculable mischief, and I doubt not, have repeatedly brought into disgrace those valuable and efficacious remedies. The seasonable employment of the bark, mercury, or purgative medicines is inappreciable, but when they are exhibited at improper periods or too vaguely administered, they must often do a great deal of harm, and can seldom be produc-

ductive of even a trivial benefit. We cannot be too exact in the choice of terms, and ought in order to prevent mistakes in practice, to define the latitude we mean to give to our expressions. I do not think that even those persons who avail themselves of the term of *pushing the mercury* always mean by it the sudden production of a powerful mercurial action, by throwing large quantities of it into the system. They mean, I apprehend, to administer it till sensible effects are perceived on the fauces and gums, well knowing that when mercury is pushed, it is impossible to limit the extent of its action, or to foresee to what height it will proceed. I am afraid, if cases were collected, there would be numerous fatal proofs of the errors committed in practice from indefinitely applying the term, *pushing the mercury*. It is in the army, where the use of mercury is so general, that its good and bad effects in the treatment of disease can be fully appreciated.

As far as my observations, and I believe I may add, the observations of most other physicians extend, there is an intermediate state, between a slight and violent action on the salivary glands, I mean that which produces scarcely soreness of the gums, or great tumefaction, pain, and pyrexia, which we should endeavour to establish and keep up in the treatment of visceral disease. If the mercurial action was slowly produced and was slight, I have observed the most beneficial changes occur in all the diseased viscera from it; but if the patient was comatose when visceral obstruction prevailed, I then always found it preferable to excite as quickly as possible a strong action on the salivary glands. A quick action was what I sought in this case; a gentle, slow and long continued mercurial action when my object was the removal of organic disease of the viscera. Nevertheless, it is a fact, that those in whom mercury had been employed too freely, from various inadvertencies, ultimately recovered, though the irritation of the system was high, the fauces greatly tumefied, the subsequent debility very great, and each step towards amendment slow, tedious and uncertain.

I do not think that a strong mercurial action had the power of securing the constitution from a recurrence of the paroxysms; but it suspended the disease invariably, made it milder afterwards and more tractable by the bark, nitric acid and iron. Though the irritation of the mercury continued for some weeks, patients generally were seized with a paroxysm, once in four or five days; still their amendment was ultimately more permanent than those who had not been put under a mercurial course. I must observe, however, that even in those patients who had been salivated, and who had just emerged from a strong

strong mercurial action, gentle mercurials were necessary afterwards to prevent a return of visceral disease, which was only to be eradicated by a long perseverance in a mild mercurial course, combined with purgative medicines and tonics.

The utility of mercury has been well proved in the early stages of the remitting and intermitting fevers of warm climates. Sometimes the quantity employed in a few days, has not been less than four or five hundred grains of calomel. In warm climates the system is capable of receiving large doses of calomel, or of bearing large mercurial frictions, before either purging, or an action having the power of resisting the disease is excited. But I am to confine myself, in speaking of the efficacy of mercury, to its employment in the advanced stage of the intermittent which I had to combat. It was always of the highest importance to seize an early moment for resorting to this remedy, to which indeed I never failed to have recourse more or less freely when the bark and purgatives had been employed in vain, as there could then no longer exist a doubt, even though induration and tension of the abdomen did not confirm the opinion, that organic changes were taking place in the viscera which retarded the patient's recovery, and laid the foundation of the most irremediable disorders. In small doses, calomel acted upon the liver and intestinal canal with great advantage, by exciting the secretions of these viscera which were in every stage of the fever vitiated, suppressed, or diminished, consequences that yielded best to drastic purgatives, and small doses of calomel taken in the intermediate days. By degrees, the disordered state of the functions was removed, and that action excited on the living fibre that restored the secretions to their natural condition, and opposed an effectual check to the morbid bias of the system. Before I mention the circumstances under which mercury was particularly serviceable, I shall state that I employed it in three different ways. In small and inconsiderable doses as recommended by Dr. Hamilton, when it was generally combined with bark. In the quantity of a grain night and morning, a dose I continued to repeat, till soreness of the gums, fætor of the breath, and a slight increase of saliva occurred. It was frequently the only medicine I gave; at other times I combined it with the cortex, or such other remedies as particular symptoms required. Lastly, by way of friction, to the quantity of a drachm every night, or every other night, until ptyalism arose. In this manner I had recourse to it, in urgent cases, where visceral disease was combined with effusion in the cavities, and the

patient

patient lay on his back, absorbed in coma, and insensible to every object around him. I do not think a single instance of recovery could be adduced wherein mercury had not been employed in one of the ways I have detailed. It frequently happened that small doses long persevered in, gave an obstinate and anomalous intermittent, a mild and distinct type, removed visceral obstruction, and placed the patient in a favourable state for recovery. At other times, no visible amendment occurred, until slight ptyalism was produced, and kept up for many successive days. I have known the mercurial action cease at the end of four or five weeks, when visceral disease has again appeared to increase, the ague return, and not disappear till two or three brisk purgatives had been administered, and small doses of calomel again resorted to, when the disease would once more yield ; a proof that neither mercury nor purgatives would alone avail in all cases in subduing it, when thus combined with extensive visceral obstruction. In general, the duration and extent of visceral disease were of that tedious and extensive nature, as to require a long continued action of the mercury, which when not excessive, proved the most efficacious and unexceptionable in every point of view. If the liver and spleen continued hard when the skin was yellow, and there was a disposition to effusion into the cavity of the abdomen after ptyalism had been produced, a very rare occurrence by the bye, I generally succeeded in removing them by purgatives, and by preparations of iron, and sometimes by persisting in small doses of calomel every night. I remember to have met with but one case of this kind, and it was entirely removed by this plan. I believe the mercury did in most cases reduce the obstructions, when it was had recourse to before the organic disease had acquired such a character as to defy the influence of medicines; but, when it had created profuse ptyalism, and had long continued a powerful action on the system, then such extreme debility and irritation ensued as placed the patient in equal danger as the disease for which it had been administered. Therefore, the practitioner whose dependance was on mercury, had to guard against its too rapid action, to consult the strength of his patient, and protect him against the debility which it invariably produced if the mercurial course was not cautiously conducted. Salivation invariably occasioned these effects; it removed coma, abated visceral obstruction, sometimes dispersed it, and suspended the paroxysms of intermittent, but it induced debility, and did not secure the system effectually against a recurrence of the paroxysms, still the changes wrought by it were often such as to lessen the sum of the patient's afflictions, and to enable the physician to bring the disease

disease to a successful issue. The exceptions to the employment of calomel appeared to me to be very few, and were comprised in the irritability of the stomach, diarrhœa, inflammatory pains of the abdominal viscera, congestion of the brain accompanied with delirium, and turgescence of the vessels of the conjunctiva. The great indications for its use were gloominess of the countenance, coma, oppression of the pulse, obstinacy and irregularity of the paroxysms, hardness of the hypochondria, and tension of the whole abdomen. This was the case in which we might expect to witness the happy effects of mercury, and where, after the third or fourth friction, the patient gradually awakened as from a profound sleep, taking notice of those whom he knew not before, and asking for food or drink. Now the dull languid eye became bright, the countenance animated, and the pulse free, in short the patient rose up, and conversed with his comrades whose company he avoided before. Where the coma was intense, I first rubbed in ʒiß. of the Ungt. Hyd. fort. and then ʒi. every other night, in order to place the system under a mercurial action as soon as possible, a circumstance I found of high importance in every comatose affection. Neither did I always suspend the internal employment of stimuli while my patient was under this treatment, but allowed him wine, if debility prevailed, or aromatics, if the stomach was irritable, and the pulse more feeble than usual. In the advanced stage of the fever, combined with tension of the abdomen, a black tongue, and yellowness of the skin, I never gave more than a grain of calomel night and morning, but neither mercury, nor any other remedy was of much service when the disease put on this appearance.

Patients have been admitted into the hospital having every symptom of hydrothorax, combined with irregular paroxysms and coma, and have been quickly benefited by mercurial frictions; nay, I have been astonished, while looking hourly for death, to find the respiration become free, the livid look and œdema of the face disappear, the intermitting change into a regular pulse, coma vanish, and in short every bad symptom subside, and be quickly succeeded by those which announced amendment.

I have known camphor and volatile alkalies relied upon, where coma was one of the most remarkable symptoms, but the benefit accruing from them, in my opinion, never could be compared with those resulting from mercury; a blister upon the head contributed much to remove coma, and sometimes with stimuli did effectually succeed, but the mercury has oftener done more alone than these remedies combined. It was my practice however to cover the head with a blister, and

and apply the mercury at the same time, in the manner I have mentioned. I found calomel serviceable in dysenteric affections, but I acknowledge it did not answer the full expectations I had formed of it in these cases. Many of my dysenteric patients were under the full influence of mercury, when they were attacked with griping pains and passed bloody evacuations; those who were not so, I frequently treated by slight mercurial frictions, or gave them a grain of calomel, or four grains of the blue pill night and morning with half a grain of opium. If purgatives had been freely employed in the early stages of dysentery, and calomel then resorted to, I think its exhibition in that case was of service in preventing the disease from running into the obstinate chronic state which proved so extremely destructive. However, mercurials certainly did not produce the same good effects in dysentery as purgatives did, whether employed so as to affect the mouth, or to operate as a purgative. Dysentery was mostly combined with indurations of the liver and spleen; but mercury, which always diminished the disease of these organs, did not in the same ratio relieve dysenteric affections.

Where visceral disease, I mean of the liver and spleen, had produced ascites, the success of mercury was frequently as great as in the other affections which I have said are the consequences of intermittent; a strong mercurial action excited unexpectedly has been followed by an absorption of the water effused into the cavity of the abdomen, the cellular texture, or the cavity of the thorax. Nay, a grain of calomel taken night and morning, with a purgative interposed once in six days, has not unfrequently occasioned ascites to disappear without employing any other treatment. Calomel however was more efficacious in this affection when combined with squills or digitalis. In cases of ascites, the supertartrate of potash was a useful purgative, though neither this nor calomel, administered with a view to purge, was productive of the same benefit as gamboge or elaterium. In all the varied consequences and combinations of intermittent, there was none more distressing or irremediable than dropsy combined with diarrhœa and dysentery, as the medicines which relieved the one generally made the other worse. I have known patients oppressed with paroxysms of intermittent, dropsy, dysentery, anarsarca, and enlargement of the spleen and liver at the same time, I may add with affections of the chest or brain, exerting their combined baneful influence, and conspiring to destroy the patient's life. Before the dropsical affection was united with all these deplorable consequences, I gave calomel, or rubbed in small quantities of mercurial ointment. Indeed I believe mercury is more serviceable when employed in different,

ferent modes; hence I was induced first to give it internally, and then to apply it to the surface of the body, both in this and every other consequence of intermittent where its administration seemed proper. I am inclined to think that dropsy arising from intermittent yields sooner than dropsies which are not occasioned by compression on the vena portarum, or a disease of the viscera.

The next medicines in point of efficacy, after mercurials and purgatives, were iron and bark, particularly the former. Withering thinks that iron is given with greater success, and I entertain the same opinion, though Bursarius seems inclined to give the preference to bark. I generally gave ʒiß. of the carbonate of iron twice a day, and sometimes an infusion of ginger, or the bitter infusion after each dose. But for the most part I administered diuretics previous to the employment of iron or bark, a part of my treatment which followed the use of purgatives and mercurials. Sir John Pringle in allusion to the obstructions consequent upon intermittent, says, "I observed that these dropsies were not to be cured by purging alone, nor by soap, nor mercurials, but chiefly by the lixivial salts, either in the form of broomashes, salt of wormwood, or salt of tartar. The common method was this, about forty grains of salt of wormwood (or tartar) were dissolved in about ten ounces of an infusion of the absinthium vulgare, to which were added about two ounces of the spirit called Hollands gin, and this mixture was taken at three draughts and repeated daily. The patient had no other medicine, except once in four or five days, half a drachm of pilula ex colocynthide cum aloe for a purge, and in the decline of the disease, some common chalybeate. Sometimes the diuresis was promoted by swallowing garlic, or mustard seed. Although the ascites was accompanied with the hard swelling formerly mentioned, nothing was further done, except fomenting the part, or covering it with a warm plaister. Some irregular and obstinate agues were removed by the same medicines, or if they returned after the cure of dropsy, they were successfully treated with the bark."

It may now be observed that upon the seasonable and judicious exhibition of mercury depended the recovery of those in whom this irregular intermittent had entailed all the various consequences of visceral obstruction; and that it formed the basis of my treatment, when the paroxyms of the fever were indistinct and without order, resisting the powers of bark, and running into the remitting and intermitting type alternately, and when they were combined with organic disease of the viscera; that by its gentle action, and long followed up, was the patient

alone

alone secured from an increase of the visceral disease and a renewed obstinacy of the fever, both which were inevitable if this mode of treatment were neglected; that in some instances it was neeessary to excite a rapid mercurial action, but that the greatest circumspection was neeessary to counteract the debility which occurred in these cases, a consequence which it behoved the practitioner always to have in view when he deemed it essential for the relief of urgent symptoms to excite ptyalism; that a slight soreness of the mouth, fætor of the breath, swelling of the gums, and a gentle flow of saliva were that height of the mercurial effect which generally sufficed for the accomplishment of every purpose that mercury is enabled to fulfil, and consequently, that intermediate state between excessive and slight action which I endeavoured uniformly to establish, a state that did not induce the debility which always succeeded copious ptyalism.

I am satisfied that on mercury only could reliance be placed in a great proportion of cases, and that all relapses were attributable to some remaining disorder in the liver, spleen, or other viscera, that lie dormant for a time, and deceived the physician, against which no remedy could avail so much as mercury persisted in for a length of time. Nevertheless I object seriously to the indiscriminate and extensive use made of it by some practitioners. When this plan was fully acted up to, it evidently induced extreme debility, from which the patient could not recover, though the disease itself had become much diminished by its employment. Mercurial frictions were generally made upon the abdomen on account of the induration and enlargement of the viscera within; but if a tendency to diarrhœa prevailed with or without any dropsical affection of this cavity, frictions with mercury upon the abdomen contributed to augment the irritability of the intestines. I have known it thus employed for visceral disease where diarrhœa had come on and ceased: and in several instances I remarked that the diarrhœa returned after the third or fourth friction, which I imputed, I do not pretend to say properly, to the mercury acting immediately on the intestinal canal. If mercury was resorted to, when the disease in some respects resembled typhus, it was never productive of any ultimate benefit. The pulse frequently at this time became soft, the tongue clean, the sordes disappeared from the mouth, the secretions returned, the mind became composed and the countenance clear; all the changes in short announced that the force of the fever was broken, but these appearances were only fallacious, for hectic, irritation, and extreme debility quickly

quickly succeeded, and with the greatest certainty terminated the patient's existence.

I have now dwelt at length on the three plans which I principally pursued in the treatment of the protracted Walcheren fever, the tonic, the purgative, and the mercurial plans: I shall next consider the remedies that were best suited to several varieties of the fever, and to certain particular and anomalous symptoms that occurred in the different stages of its progress.

I may repeat that a great similarity of symptoms, appearances and phenomena, was to be traced in this fever; yet, in passing from one stage to another, it now and then in particular constitutions, states of the weather, and situations of the sick, gave rise to anomalous symptoms that induced a new bias to the system, and produced unusual disorders in the functions of other organs. Sometimes, by directing its force against the stomach, the fever produced perpetual desires to vomit, occasionally exciting inflammation in that organ; but more generally it induced a chronic kind of erythema on its internal coat attended with pyrexia, dyspepsy, extraordinary distensions of the stomach, acid eructation and complete anorexia. Now it was congestion in the brain, or a kind of fatuity, then inflammation of the tonsils and a sort of croup terminating the patient's life in a few hours; now a violent pain in the kidneys and a suppression of urine, sometimes an erysipelas of the face, arms or legs, then a scarlet eruption over the whole body; now it was syncope, and palpitations of the heart, then worms and hæmorrhagies from the intestinal canal. These and various other symptoms and appearances occasionally supervened and added new difficulties to the treatment.

If, combined with gastric disease, there was an unpleasant taste in the mouth, a thick yellow crust upon the tongue, a fulness of the epigastric region, and a frequent desire to throw something off the stomach, an emetic was necessary, and never appeared under such circumstances to debilitate the stomach, or to be followed by languor and faintness, a common effect when emetics were given indiscriminately; after this, absorbent medicines, an infusion of columba, or the sulphuric and nitric acids generally proved of the utmost service. If the vomiting continued, a blister generally allayed it. Congestion of the brain demanded blisters to the head, and active purging. Inflammation of the tonsils was best remedied by scarifying them deeply by blisters to the throat, pediluvia and purgative medicines. Suppression of the urine generally yielded to warm baths, diluents, opiates, and anodyne injections. Erysipelas required wine and bark. Scarlet eruptions were

removed by small doses of calomel and antimony, the sulphate of magnesia and diluents. Syncope called for stimuli of the diffusible kind; palpitations of the heart for digitalis. Worms were expelled by means of calomel, castor oil, rhubarb and gamboge, and hœmorrhagies of the intestines were best combated by gentle aperients, opiates, the nitric acid, or sulphate of zinc.

I shall now detail the treatment I specially employed for intermittent of the character I have elsewhere described. In consequence of the irritable condition of the stomach in protracted intermittent, I seldom prescribed emetics, a practice still had recourse to at the approach of the paroxysm. On the contrary I sought to obviate the torpor of the system at this time, and to diminish the irritability of the stomach by opiates and the diffusible stimuli, I have elsewhere spoken of; after which, the next indication to be fulfilled was the diminution of action in the vascular system, the moderating the blood's motion, and the detracting from the sensibility of the solids, a property they partook of in a high degree during the hot stage, seemingly in the same ratio as they lost it while the cold stage prevailed. Here, bleeding would in recent cases of intermittent stand unrivaled, but in the protracted disease I had to combat, it could be rarely had recourse to, except in those cases which were combined with inflammatory action, evidently characterized, of the lungs, or abdominal viscera. An opiate often constituted the only remedy of activity during the hot stage, where it had not been administered at the approach of the cold stage of the paroxysm. Diluents, the mineral acids, and saline medicines comprised the other part of the treatment at this period. When the bowels were constipated, and the abdominal viscera and head were seized with acute pains, injections gave relief and moderated the pyrexia with which they were accompanied. Those, as well as local fomentations, all contributed to abate the tension and uneasiness of the abdomen, and to determine the sweating stage with greater certainty and expedition. I have been sometimes led to put the patient into a warm bath at the approach of the cold fit in order the more effectually to relieve the general pains which prevailed in the viscera that had become much diseased by a repetition of the paroxysms. Pediluvia also contributed to reduce the action of the vascular system, and to bring the hot fit to an earlier termination.

If, by this means the paroxysm did not terminate completely, but left pyrexia, and was quickly succeeded by another paroxysm, which, in its turn, did not come to a critical solution, nor recur according to the usual type of the intermittent,

mittent, and was followed by fixed local pains in the head, chest, or abdomen, blisters proved to be valuable topical applications. When the fever was thus irregular and obstinate, the paroxysms subintrant, the type variable, the interval short and confused, Lind applied blisters between the shoulders with excellent effects. Rush also, when he found that the bark failed, from these causes had recourse to blisters, but directed them to be put to the wrists. We are informed that Jackson applied blisters to the nape of the neck, in those cases which resisted every other method, and he found the disease at once yield to them. But it must be remembered that these favourable changes were noticed in recent disease, and did not occur, as similar trials proved in fever of long standing.

I considered coma as a symptom indicative of obstinacy and danger in the disease, and always employed the most decisive means for removing it. Bathing the head repeatedly with warm water, and then covering it with a blister frequently proved serviceable; but mercurial friction was more effectual, and the practice which I uniformly pursued when coma was intense. I do not approve of the common method of blistering the shoulders, legs and thighs, in protracted fever, with a view to give regularity to the paroxysms, and to determine a crisis. They did not succeed in effecting this at Ipswich, but on the contrary, proved a source of great irritation and suffering to the patient without benefiting him. Pains, for instance, in the hypochondria, as in the head and chest, have indeed been entirely removed by their application, and where bleeding, owing to the debility of the patient, seemed improper for the removal of the visceral disease of the abdomen, a large blister had its advantages. Yet warm baths, fomentations, injections, opiates and purgatives were productive of nearly the same benefit without occasioning a similar irritation. In organic disease of the viscera they were at most only of temporary service. They never did good in cases of great tension of the abdomen, but upon the whole proved of benefit in coma, irritability of the stomach, and in pneumonic affections.

As soon as the paroxysm was ended, my first object was to procure copious evacuations by drastic purgatives, a practice that was uniformly serviceable, even where diarrhœa was present *, and never to the best of my recollection proved injurious, though dysentery had supervened. I ordered half a scruple of gamboge, with half a drachm of supertartrate of potash, or two grains of elaterium, to be taken, either of which produced copious evacuations, carried off the tension of

* Except colliquative diarrhœa, in which of course they were not given.

the

the abdomen, and gave great relief to the patient. I repeated this dose once in seven or eight days, according as the irregularity of the paroxysm, and the visceral disease, indicated its necessity. I never prescribed these drastic purgatives without finding their operation followed by an energetic performance of the intestinal functions, a secretion of bile, an absorption of effused serum, an increase of all the secretions, and a diminished action of the vascular system. In different parts of Hippocrates' writings, we read of fevers being removed or diminished by the appearance of diarrhœa, but without stopping to comment upon his doctrine with respect to this, I shall observe that after having procured my patient plentiful evacuations, and thereby determined a complete apyrexy, I ordered him to take two scruples of bark every two hours, assisting its operation, if necessary, with opium, when the bowels were irritable, or counteracting its constipating property, when required, with rhubarb, aloetics, or the supertartrate of potash. If the obstructions of the viscera were slight, and the fever tractable, the patient frequently improved under this plan, for the space of ten or twelve days, and the paroxysm disappeared; still, upon examining his abdomen, indurations were perceptible in the hypochondria, and sometimes tenderness, certain indications that the paroxysm would again recur, and relapses prove both serious and frequent. More generally however, after a suspension of the paroxysm for a few days, the patient was, while under the operation of bark attacked with a more severe double tertian paroxysm, sometimes distinctly marked, at others becoming subintrant, anticipating or postponing; while in others, a single tertian or quartan would declare itself, and not unfrequently the paroxysms so much varied their type and appearance, as to give the fever a remitting more than an intermitting character. In this state of the system I again repeated the purgative medicine, and gave a grain of calomel night and morning, and awaited for an interval to resume the bark. If under this treatment the patient was still attacked with paroxysms, and visceral disease appeared to augment, I repeated once more the purgative dose, gave a grain and a half of calomel every night, with half a grain of opium, and a grain of calomel every morning. In the mean time that I was exciting a mercurial action, I administered bark, if the intervals were distinct, and the stomach bore its exhibition. In proportion as the mouth grew tender, the paroxysms always became milder, and less bark produced a better effect than large doses did before. Now the paroxysms were frequently suspended for seven or eight days, succesively, then recurred once, and disappeared again,

again; at the same time the abdomen became soft, the hypochondria bore pressure without experiencing pain, and amendment was fast taking place.

The great indication to fulfil now, consisted in keeping up a gentle and long continued action of the mercury, and in occasionally stimulating the intestines to perform their functions with energy by a drastic purgative. A visible diminution of the hardness and fulnesss of the abdomen succeeded each purgative medicine, and induced such feeling of ease and comfort over the universal frame, as to make the patient express his surprise, and reckon with certainty on soon attaining convalescence. If the bark did not irritate while the system was under the influence of mercury, I ordered it to be continued, but if it created any unpleasant sensations, I superseded it by nitric acid, which often proved a most valuable tonic, and never occasioned the least pyrexia.

Having so far changed the aspect of the fever, and prevented a recurrence of the paroxyms for ten or twelve days successively, I directed the greater part of my attention to the visceral disease, well knowing that unless it was thoroughly eradicated by a long perseverance in purgatives aud mercury, it would re-appear at a future time, and by gradual advances bring the patient to his tomb. If, after a month's treatment of this kind, I found the hardness of the hypochondria vanish, and the abdomen become soft, the strength return, the body acquire flesh, the countenance assume a ruddy aspect and the secretions become natural, I considered my patient a convalescent, but strictly enjoined that he might be made to take bark, and small doses of calomel for weeks after, when he was removed to a convalescent depòt. Even under all these favourable circumstances, relapses took place, and therefore proved the necessity of my studying to give energy to a constitution that had received so severe a shock, by a nourishing diet, the use of wine, bark, nitric acid, change of air, exercise, all which could very properly be administered while purgatives and calomel were at times interposed, according to the strength and apparent recovery, or tendency to relapse in the patient. Those of the sick, who were thus treated from the beginning of the formation of visceral disease ultimately recovered, but those who took bark only, relapsed, and returned to the hospital, with enormous enlargements of the liver and spleen, dropsy, jaundice, diarrhœa, and dysentery. In all such cases as these, debility was at least as formidable as any of the other consequences of the fever. To support the system, nutritious diet and wine were absolutely necessary, though they were administered at the risk of incurring a temporary increase

of

of the local diseases. If they were allowed in small quantities, the patients sunk sooner, irritation, and all the distressing sensations connected with debility, local pain, and habitual disease afterwards were greater; nay, opposed with but too much effect the operation of every medicine exhibited to suppress them. Topical remedies availed for the most part in counteracting congestion and disease of the viscera, but nothing could obviate the consequences of debility; for where the vital powers were allowed to be secretly and silently sapped without an effort to counteract such an effect, no treatment afterwards could rescue the patient from destruction: hence I made an invigorating diet, in which I include wine, a prominent feature in my practice.

If a case of fever had been of very long standing, when the management of it was committed to me, and the paroxysms were confused and anomalous; if the abdomen was large and hard, and dropsy appeared to be approaching, and coma prevailed, I pursued a more active plan than that I have described. Then I employed mercurial frictions, so as to excite a slight ptyalism without loss of time, for the operation of the mercury was too slow in this case, when taken inwardly, to the quantity of a grain only night and morning, "Multa in præcipiti periculo," Celsus says, "recte fiant, alias omittenda." I allowed the salivation to subside, as soon as I had brought it to the height I wished it to obtain, which I did by sponging the body frequently with cold water, and by giving a drastic purgative every third day. In the first instance, I was anxious to excite a strong action, in order to give that general excitement to the system, which terminated in the removal of coma, the absorption of effused water in the cavities, and a change in the type and violence of the paroxysms. In the next place, I did not wish to let the body become debilitated by the exhausting consequences of profuse ptyalism, so that having accomplished the first purposes for which the mercury was exhibited, I then sought by the means I have mentioned to diminish its action. At the same time I took care for weeks aferwards to keep up a gentle mercurial action, as the only means of effectually removing the visceral disease, which would otherwise exist, and even increase, after the abatement of coma, the suspension of the paroxysms, and the diminution of urgent symptoms. If the bowels shewed a tenderness to become irritable, and the viscera of the abdomen were oppressed with wandering pains and tenderness, I sometimes found the cicuta combined with carbonate of lime, a valuable medicine.

The action of the mercury frequently seemed to be more effectual

effectual when three grains of cicuta were taken every four hours; the irritation of the bowels ceased, and the enlargement of the liver and spleen appeared, under the use of this medicine, to give way sooner. The common chalk mixture was a good vehicle for it, and often gave a new efficacy to its operation. Patients in whom the fever had made these extensive ravages, frequently had their stomachs so irritable, as to reject every substance that was received into them. By means of three grains of opium and an assafœtida glyster, the efforts to vomit were mostly appeased. If, however, they still continued, cordial medicines, Cayenne pepper, and chamomile flowers powdered, or an infusion of columba, were given, a drachm of laudanum was rubbed into the epigastric region, and a blister was there applied with great success.

In the more advanced stages of the fever, where there was constant pyrexia, a muttering delirium, a glassy look of the eye, frequent efforts to vomit, a yellow suffusion upon the skin, a tremulous pulse, coldness of the extremities, black tongue, hurried respiration, general tension and tenderness of the abdomen, and pain in some particular abdominal viscus, I gave the bark with serpentaria, aromatic confection, and the volatile alkali, with sixteen ounces of wine in the course of the twenty-four hours. Symptoms indicatory of congestion in the brain, required large blisters to the head; and a copious discharge of black and fetid feces, or an obstinate costiveness, equally demanded a purgative medicine. Here I generally gave a dose of calomel and jalap, which by the fetid matter they discharged from the bowels, always afforded relief, and at least procured temporary ease in the viscera; after this I gave a grain of calomel, night and morning, kept the intestinal canal free by injections, and relieved the distension and uneasiness of the abdomen by warm baths. If the delirium still persisted, and the patient was agitated and wakeful, I prescribed him two grains of opium, which even in these last stages of the fever, were productive of calm sleep, and the abatement of violent symptoms. Sometimes the bark could not be retained, at others the heat of the body seemed to forbid its use, when camphor with ammonia, were administered, or occasionally the camphorated mixture with the aq; ammon; acet. But when the patient had reached this state, wine was the great dependence; and small doses of calomel in order to keep up the intestinal functions which were always irregular, and diffusible stimuli. There was mostly a particular tension of the abdomen, in every protracted case, that was much relieved by a warm bath, or fomentations; but never that I could observe by blisters. I have found that sponging the body with warm

water

water was followed by a diminution of pyrexia, refreshment, and sleep. In other instances I have employed cold affusion with evident advantage, but in advanced cases the tepid affusion generally seemed to be the most serviceable. It was no unusual circumstance for a patient to improve under this treatment, and then on a sudden to have an exacerbation of fever, more like hectic than a paroxysm of intermittent, and all the bad symptoms recur with redoubled violence, from which he would once more appear to recover; but this was generally an interval of fatal repose, a false appearance that was the certain forerunner of approaching death. It must be acknowledged candidly, that when the fever had reached the height I have described in this paragraph, the patient generally died, whatever mode of treatment I adopted. If I excited a slight soreness of the mouth by mercury, I sometimes saw all the bad symptoms disappear, but the patient literally died of debility afterwards: if wine was forbidden, and the diet of the patient low, while I gave febrifuge medicines, and a grain of calomel night and morning, to regulate the intestinal function, the patient gradually sunk in every instance and expired: if diffusible stimuli were freely administered with aromatics, and a purgative now and then interposed, the patient bore up better against the disease, shook off unfavourable symptoms, and became serene, but in nineteen cases out of twenty, fell a victim to it.

I have repeatedly observed patients go through all these several stages of the disease, step by step, in the hospital, but they reached it oftener in the last stage when there was not the least prospect of their profiting by medical aid. The last stage of intermittent bore a strong analogy in its appearance with typhus, but dissections proved that there was no other analogy between them, than what superficial phenomena led you to suppose. The same morbid appearances were met with in patients who died with constant pyrexia, muttering, delirium, black tongue, bilious vomitings, and black offensive stools, as in those who died after, or in a paroxysm of intermittent, or from the ravages of visceral disease. Besides, I have been able to trace indistinct paroxysms of the subintrant kind in the progress of the fever, which has been often mistaken for typhus, though not unfrequently the disease of the abdominal viscera in this stage of the disorder, has been too obvious for it to be confounded with idiopathic typhus.

A diarrhœa of a colliquative nature coming on at any period of the fever, was restrained by absorbents, the catechu, hœmatoxylum, sulphate of zinc, wine, and cordials. Hiccup was frequently a troublesome symptom, but has often been

been made to yield to a blister, asafœtida injections, opium and camphor. Subsultus tendinum was not so easily removed; it announced extreme debility and danger, and was generally a precursory symptom of death. Hæmorrhagies from the nose were not to be checked precipitately. When moderate, they abated pyrexia, relieved headach, and terminated the paroxysm. There were men, however, who had hæmorrhagies from the nose at every paroxysm, by which they became so much weakened, as to make it necessary to apply pledgets to the nostrils, and a blister between the shoulders, in order to prevent a further loss of blood. In these cases the diluted sulphuric acid was also serviceable. I have relieved urgent pains in the right and left hypochondrium by blisters, but I am persuaded that cupping would have been a far more successful practice. "Quand on considère les nombreuses ramificationsde cette veine, qui rapporte lentement le sang vénal du systeme hypogastrique, des intestins grêles et gros, de l'epiploon, de l'estomac, de la rate, la marche souvent retardeè du sang avant d'arriver au tronc, la manière dont celui faisant fonction d'artere, pousse le sang à travers toutes les causes de retardement dans le tissu resistant du foie, les influences que peuvent avoir sur les derniers capillaires, les réseaux nerveux qui entourent, en forme de gaine, leur tronc comme dans les passions vives, du lentes, on ne peut s'empêcher de reconnâitre dans l'état pathologique de cette veine, une preuve des assertions que ce restaurateur de la saine médicine établit dans sa dissertation. Aussi, est c' à cet état qu'il rapport les causes des affections hypochondriaques, hystériques, spléniques, hæmorrhoidales, coliques, cardialgiques : celle des vomissemens de sang, des suffocations, des ictères, des ascites, des convulsions et épilepsies : d'ou il conclut que l'application réitérée des sang-sues en procurant une déplétion locale a souvent produit un plus prompt et un meilleur effet en pareilles circonstances, que tout autre remède qui auroit été prescrit sans intention de remplir cette indication."*

Had an opportunity occurred of trying the effects of electricity on the diseased viscera of the abdomen, I should have been happy to have employed this means of cure amongst others. Bursarius says he cured a quartan by electricity alone, and Cavallo says that intermittent is often cured by drawing sparks through flannel, or the cloaths, for fifteen minutes before the paroxysm commences, or even during its presence; electricity may act by producing perspiration, and from its well known efficacy in removing tumours of various kinds it is probable it might be employed with advantage in visceral obstruction occasioned by the Walcheren fever.

* Le Roy.

After the paroxysms had been stopped, and visceral disease removed by the plan I have laid down, I found preparations of iron useful in preventing a relapse. Fordyce has met with success from zinc, but I never had recourse to it for this purpose. The sulphate of copper, I have employed with advantage, but I never gave it so freely as is done by some practitioners. The objection which I have to its general and free use is, that I found it apt to induce pyrexia, and to disorder the bowels. When intermittent was fairly stopped and visceral disease entirely removed, the sulphate of copper was less apt to produce these effects. The dose I gave was half a grain twice a day. I have been informed that a grain of it taken at the approach of the cold stage in a glass of Hollands gin has brought the paroxysm to a speedy termination. I tried arsenic in some cases, but it produced nausea, sickness, and gripes; my experience however with regard to the efficacy of this remedy, does not entitle me to condemn or praise it. It invariably failed in those patients for whom I prescribed it.

When the patient was in a convalescent state, he stood in need of nutritious diet, tonic medicines, change of air, and exercise on horseback; animal food, and strong beer were also adviseable, provided the digestive organs had the power of converting them into nutriment. But all these means were insufficient unless the body was maintained in a proper temperature by comfortable warm cloathing. Here, I must observe, the liberality of government was never more advantageously displayed than in giving at the public expence, flannel waistcoats and drawers to each soldier, before he was dismissed from the hospital. I have no hesitation in saying that warm cloathing and generous diet, would, when the men were attaining convalescence, secure many a valuable life to our king and country, acting as the most effectual preventives against a relapse.

Having now given an account of the progress of the fever of Walcheren in this country, the consequences it entailed on the constitution, and the mode of treatment I pursued, I shall proceed to speak more particularly of some of the disorders which arose out of this protracted fever, and first of diarrhœa and dysentery, two complaints that were accompanied with peculiarities and anomalies that merit to be detailed.

SECTION

SECTION VII.

CONSEQUENCES AND TERMINATIONS OF THE PRIMARY DISEASE — DIARRHŒA — DYSENTERY — ASCITES — ANASARCA — HYDROTHORAX — HYDRO-PERICARDII — ANASARCA PULMONUM — DROPSY OF THE BRAIN — JAUNDICE — TREATMENT, &c.

There were no consequences of the Walcheren fever more frequent than bowel disorders, and none more destructive. Diarrhœa, but more commonly dysentery was the sequel of fever, which oftenest conducted the patient by slow and insidious advances to his tomb. Whether dysentery became the common disorder met with at Ipswich after a long continuance of the fever, in consequence of any particular connection between fevers and dysentery, consisting in a modified operation of the original disease directed against the bowels, I leave others to determine. In favour of this conjecture it may be recollected that the causes which have produced dysentery, have by renewed activity and a concentrated power, been remarked to give rise to intermitting fever, and that dysentery has been converted into the febrile endemic prevailing in the situation in which it occurred. I do not intend here to enter into an investigation of the causes which are supposed to occasion dysentery. This would be writing a treatise on that disorder, instead of confining myself to a few observations upon it, as a consequence of the protracted fever of Walcheren. Nevertheless, I may be permitted to remark that a pre-disposition to dysentery to the sick must have been imparted from that concurrence of causes which combined to produce the fever itself; nay, it seemed to supervene during the progress of the intermittent as if it were acquired from this disease, hence there was no wonder at the frequent appearance of dysentery and still less so, as idiosyncracy, fatigue, debility, and all the various concurring causes existing in the sick, conspired to favour its invasion and to give it the character of obstinacy and violence. The fatality, however, of dysentery, appeared to depend less on its severity than its duration, by which means a chronic disorder was established, gradually destroying the structure of the large intestines, converting their coats into a thick substance like leather, their inner surface into a scabrous ulcer, which first created pain, pyrexia, and tenesmus, to which succeeded a train of the most agonizing symptoms, that ultimately induced hectic, emaciation, and death. Dysentery was not always attended with primary pyrexia, neither was it ever communicated from one patient to another, by effluvia, in

in the polluted air of a ward, arising from the matter of perspiration, the excrements, or any other body that could serve as a vehicle for contagious matter. Indeed, I doubt if even acute dysentery be ever communicated to other patients lying in the same ward, exposed to its influence.

In consequence of the violence exerted upon the viscera of the abdomen by the paroxysms of the Walcheren fever, the secretions of the liver and intestinal canal became suppressed or vitiated; derangement in the performance of their functions, congestion, diminished sensibility in one part of the intestines, and increased sensibility in another, ensued, producing various appearances in the alvine discharge, as well as occasioning griping pains, long before diarrhœa and dysentery declared themselves. The first changes which the intestines underwent therefore, were by no means very well characterised; dissection proved that the first visible alteration consisted in the appearance of inflammation, which manifested itself in red stripes surrounding the inside of the intestine, similar to a ring, at other times in small red specks, scattered promiscuously throughout the inner coat of the colon, and rectum and which occasionally extended into the ileum. Where these marks of slow inflammation existed, the intestines were rather contracted and their coats something firmer than natural. In this stage of the disease, the small intestines were frequently of a dark purple colour, and the valvulæ conniventes very red; but when the disease had been of longer duration, the colon was thick, firm, and not larger in diameter, than the jejunum or ileum; and instead of the red stripes, there were clusters of small tubercles of various colours interspersed on its inside. They were red, yellowish, or brown, sometimes degenerating into scabrous ulcers and now and then yielding when pressed, a caseous kind of substance. If the disease had proceeded to a still greater height, the inner surfaces of the colon and rectum were completely ulcerated, and scabrous; they had frequently sloughed, and sometimes were of a black colour, and emitted a most offensive odour. Long, however, before the disease was even so palpable, as in the first appearances, there intervened a series of distressing sensations, which gradually were lost in the pain experienced in going to stool, throughout the intestinal canal, and in other acute and transient pains which followed the paroxysms, and terminated first in diarrhœa and then in dysentery. Thus, very depraved sensations, and unnatural motions of the fibres of the intestines often existed for weeks before a character was given to the disorder, feelings which the patient, in his greater conflict, with the fever passed over unnoticed,

ticed, or probably could not describe, any more than we could trace marks in the beginning of their having existed in the intestines.

I shall first describe the mode of invasion of dysentery, in the sick at Ipswich, the symptoms and affections of the bowels that preceded its developement, and all the phenomena attendant upon it, while it yet consisted in morbid irritation of the intestines, and in accumulated sensibility in one part, and torpor in another.

Dysentery generally began without pyrexia, and was preceded by diarrhœa, debility, extreme languor, distension and tenderness of the abdomen, a sensation of numbness in the umbilical region, dull pains which prevaded the intestinal canal, and evacuations as different in colour as in consistence. In a very few instances did the febrile symptoms, considered by Dr. Cullen, one of the chief distinctive marks by which dysentery is to be known from diarrhœa, appear. The pyrexia which attended it was so slight in the beginning, as scarcely to be noticed; but it sometimes increased with the disorder in the various stages of its progress, till the paroxysms of the Walcheren intermittent, and the fever occasioned by the dysenteric complaint, were so confused as to offer more the appearance of continued fever with exacerbations, than of fever of an intermitting nature, or a fever symptomatic of dysentery. For weeks frequently before the character of the disease was developed, the patient with the symptoms upon him I have just mentioned, voided when free from diarrhœa, dark and fetid excrements of a knotty description, or excrements of a frothy, oily, and somewhat mucous character. He complained of uneasiness of the stomach, and wandering pains in the bowels; his urine was turbid, his pulse quick and feeble, and his tongue white; his countenance was dejected and sallow; he was distressed with dyspepsy, and expressed that he felt more frequent desires to go to stool than usual, that he voided but little and experienced no relief from this effort afterwards. Pain was gradually experienced over the whole abdomen, accompanied with a sensation of tightness in the umbilical region; the patient passed liquid stools very often, had considerable straining at the time, and grew thirsty. In this state he has continued for two or three weeks, none of the usual astringent, absorbent, and opiate medicines, commonly prescribed for diararhœa with tormina, affording him the least benefit. He next complained of pain moving over the abdomen, extending to the loins and terminating in the rectum, which excited a constant desire to go to stool, a desire he complied with, though nothing but mucus escaped from the bowels. This uneasiness then subsided, and was followed by sickness, but it returned ten or twelve times in the course of twenty-four hours.

Now

Now the bowels acted with such rapidity, that the patient, without a moment's warning, was forced to rise suddenly from his bed; then they became constipated, and again run into irritable action; at length tenesmus acquired a distressing severity, and blood and mucus passed freely, with a small admixture of natural feces. Sometimes a membranous kind of substance was voided with acute gripes, and sometimes a bloody fluid resembling *lotura carnium* escaped with syncope; in this succession of morbid phenomena, hectic combined with pain to wear out the patient's strength, and to plunge him into a state of dismal despair and emaciation from which he never recovered.

Such were the symptoms which attended dysenteric affections in their several stages. They for the most part began with diarrhœa, alternated with it, and put on a mixed appearance, making it difficult to ascertain the real nature of the disease. While these morbid phenomena prevailed, paroxysms of the Walcheren intermittent every now and then occurred, and added to their severity; but in general, the intermittent paroxysms declined in frequency as the dysentery became confirmed and approached its last and irremediable stage. I always found that dysentery which was preceded by diarrhœa was very difficult to treat in consequence of being almost always combined with changes of structure in the intestine. Diarrahœa might be considered as the commencement of dysentery, and had its origin, as dissection, proved in chronic inflammation of the bowels. Hence it was, that after a diarrhœal complaint had been checked by astringents and opiates, for a few days, a sudden discharge of blood or mucus took place with tenesmus and tormina, all which symptoms went on increasing, and at last put an end to the patient's life; the intestines upon inspection exhibiting vestiges of a long standing chronic disease.

In the chronic dysentery, succeeding intermittent, the symptoms rather destroy by their perseverance and duration, than their severity. In acute dysentery, they put an end to life by their violence. The griping, and inclination to go to stool have, however, in the sick at Ipswich, sometimes occasioned syncope and vomiting; and the pyrexia that followed has been so high as to make it necessary to employ evacuants freely. A perplexing circumstance in chronic dysentery was this: when one portion of the intestine that had ulcerated healed, another portion inflamed, went through similar changes, and healed in its turn, so that the patient was a prey to successive ulcerations of the greater part of the colon and rectum. I have noticed numerous cicatrices in the colon, surrounded by small

small ulcers of a scabrous nature, resembling chancres. The hopes of the practitioner were often on a sudden lost in his treatment of dysentery, by this tedious renewal of the disease. After he had experienced the satisfaction of finding the stools become copious, natural, free from blood and mucus, in short, of witnessing the disappearance of all bad symptoms, they again recurred with gripes, tenesmus, hectic, and all the other distressing phenomena of this exhausting disease. These cases always proved fatal, and were much aggravated by an occasional paroxysm of ague. Indeed, I think dysentery at one time gave obstinacy to intermittent, though it was rather unusual, while this in turn augmented the bowel complaint.

I have already said that the approach of dysentery was uncertain, and that it generally began with diarrhœa; that the stools were free from mucus, and the pain in the abdomen slight; that there were very little thirst and pyrexia; but that as the disorder of the bowels changed from diarrhœa to dysentery, gripes, nausea, and pyrexia ensued; the stools were small, and composed chiefly of mucus; great uneasiness was felt throughout the intestinal canal, but more severely in the rectum: the patient strained ineffectually when at stool, to which he was repeatedly urged by the violence of tenesmus. When dysentery became more confirmed, the patient felt a numbness over the whole abdomen, sometimes a burning heat, and then a sense of extreme soreness, always increased by the slightest exposure to cold. Indeed, sensibility to cold might be included amongst the diagnostics of the chronic dysentery that prevailed at Ipswich. Contrary, however, to the common way in which dysentery was ushered in, costiveness was, in some instances, one of the first symptoms of the disease, to which succeeded gripes, tenesmus, and bloody evacuations. Sometimes indeed, dysentery has begun with gripes, which have ceased for three or four days, and then returned again before the other symptoms characterizing this disease have appeared. These various phenomena which I have described, did not observe any regular order in their developement, neither did they come on always with equal severity. While they were slight in one patient and yielded to purgatives, in another they stamped on the countenance the keenest agony, obliging the sick person to draw up his legs and thighs to his abdomen, in which state he would lay for three or four hours together. But the symptom which above every other increased the misery of his feelings, broke down his strength, and struck at his life, was tenesmus.

Scybala were by no means of the frequent occurrence commonly met with in dysentery. The feces were oftener of a gelatinous

gelatinous consistence, changing gradually from a frothy yellow appearance, to one of a dark grey, intimately blended with blood. Stools of this latter description, were commonly attended with pyrexia, gripes, and acute tenesmus. The deep red stools with mucus were also very bad. Those which were intermixed with blood, and of a florid colour, were symptomatic of less disease, and of that being seated in the rectum. A profuse discharge of blood, of a dark colour, intermixed with membranous filaments, implied change of structure, and extensive ulceration of the intestines. These cases admitted of no cure, and, for the most part, ended in gangrene and sloughing of the colon and rectum. When substances which had been formed by inflammation of the inner surface of the intestines, had made a lining to them, and had been forced off by some violent contraction of the bowel, they came away in detached pieces, mixed with purulent fluid or blood, and were certain indications of the patient's approaching death. This was the case in which the most deplorable feelings occurred, and sometimes were unfortunately of some few days duration. The membranous substances that were voided, did not resemble organic parts. I have seen upon dissection, layers of condensed coagulable lymph attached to various portions of the colon, that had an exact analogy with those that were expelled.

I ought to mention, that in some of the varieties of this chronic dysentery, there was no tenesmus, and the bowels were rather confined, yet the patient complained of loss of appetite, gripes, had slight pyrexia, and voided mucus freely, intermixed with blood. Syncope was a common symptom in the latter stages of the disease: the patient could not even bear the fatigue of speaking, his temper became very irritable, occasionally his intellectual powers failed him, and his tongue at last grew hard and black, the same as in those men who died from the violence or duration of the fever. I have repeatedly known all the symptoms indicatory of dysentery subside, and be succeeded by those of diarrhœa, when this has again given way, and been followed by dysenteric appearances.

In the bodies of men who died of chronic dysentery, the liver and spleen, as well as the intestinal canal, were observed to be extensively diseased. I believe disorder of the liver may have some share in producing a dysenteric affection, by depriving the intestines of their natural stimulus, the bile; by secreting a vitiated bile, which, by its acrid properties, shall irritate them; and lastly, by the vicinity and connection of the liver with the intestinal canal, a part that will, by the laws of sympathy,

sympathy, be made to partake of any diseased action which the liver may be sustaining. The obvious consequence of a defect of bile in the intestines, is torpor and a feeble peristaltic motion: hence, feculent matter accumulates, depriving, by its irritating properties, the bowels still more of their natural tone, and thus throwing them into irregular motions and contractions. Even if the bile be, in natural quantity, thrown into the intestines, but is weaker than usual, the same consequences ensue. The thin feces which were passed in the diarrhœa preceding dysentery, were, I think, to be referred to the weak and altered quality of the bile: the darker coloured feces to the still more depraved state of this animal fluid, and scybala to its diminished quantity. If the disordered state of the liver did in any shape contribute to the formation of chronic dysentery, this too, in its turn, served as a morbid cause operating on, and influencing the functions of that viscus. Dissection has shewn that in the early stages of dysentery, the gall bladder has been found nearly empty, or containing very little bile: hence, there is a presumption that a diminution of this animal fluid, or its depraved condition, may, in the manner I have mentioned, indirectly contribute to the formation of chronic dysentery. I cannot pretend to say in what manner the vessels of the liver become acted upon, to prevent the secretion of bile from taking place. Whether the constriction of the surface which occurs in a paroxysm of intermittent, be communicated to the vessels of the liver, sympathetically by the skin, or through the intestines, thus paralizing the action of the liver; or whether the circulation of the blood meets with impediments in the liver, whereby the process is suspended, I leave for others to decide, with this observation, that a suppression or perverted condition of the biliary fluid, seems to be followed by diarrhœal and dysenteric affections. It is undoubtedly necessary, in order for secretion to be performed, that the gland should possess the sensibility or the power of attracting to itself, as it were by a touch, the particles moving in the blood which are to compose the bile; and as this power must, I presume, be imparted to it by the nervous system, there is no occasion to search further for the non-performance of this function, than to the deranged action of the nerves when operated upon by marsh effluvia. By a repetition of the shock occasioned by the paroxysm, the vital action of the gland became impaired, and almost suspended, so as for secretion to be imperfectly performed. I see no objection to extend this supposition a little further. May not even the vascular system of the liver, be rendered torpid through the diminished energy of

 the

the nerves? and may not the nervous system also, morbidly affected, act immediately upon the intestinal canal; and by its irregular distribution of sensibility over this system, lay the foundation of chronic dysentery? Indeed, just in the same way, may the vascular system of all the viscera of the abdomen be affected, and plethora, in short, of the whole venous system take place, agreeably to the doctrine I have elsewhere held.

I have next to remark, that there was a great tendency in dysenteric patients, to relapse, and a great debility of the stomach and intestines, for weeks after their recovery. Costiveness, diarrhœa, and dyspepsy, were amongst the most troublesome sequels of the disease. In some instances, a difficulty of making water, with a numbness about the neck of the bladder, extending to the glans penis, ischuria, and hæmorrhoids, proved very distressing, and retarded the patient's recovery.

In the early part of my practice at Ipswich, I supposed that I could not, in the treatment of diarrhœa, soon enough employ those medicines which, by their astringent property, have the power of checking the too copious secretions of the intestines. I thought that the weakness and great emaciation attending diarrhœa, the absence frequently of pain in the bowels, and the dropsical disposition of the body, all called for the use of astringents and absorbents. The continual exhalation of thin watery fluids from the intestines, wore away the patient's strength, and bore the strongest possible marks of torpor and debility of these viscera. The medicines I gave to check diarrhœa, were the carbonate of lime, catechu, hæmatoxylum, and opiate confection. I soon, however, found that when the diarrhœa abated by these medicines, by no means a very common circumstance, pains succeeded in the intestinal canal, distension and general uneasiness of the whole abdomen. In short, during the exhibition of astringents, the disease, though attended with fewer stools, encreased in the severity of other symptoms, and was soon followed by pyrexia. On the contrary, when I gave a purgative medicine, the disease seemed suspended for a day or two, and the patient experienced ease and comfort, circumstances that first induced me to try an opposite mode of treatment to the first which I adopted. Diarrhœa was not to be considered colliquative in the beginning of the bowel affections which succeeded the Walcheren intermittent. It had its source in partial excitement of the intestines, in the presence of chronic inflammation of their inner coat, and of scybala, or acrid matters lying in the plicæ of the bowels. I learned from dissection that a slow passive

passive kind of inflammation existed in most instances in the inner surface of the intestines, and that it was probable that this gave obstinacy to diarrhœa on its early declaration. Stools that were voided at the latter end of the fever, when it approached a fatal termination, and that were not accompanied with griping, and had a thin yellowish colour, pointed out the necessity of giving astringents and opiates, to which remedies, indeed, this kind of diarrhœa only yielded. The catechu is in general a valuable medicine in diarrhœa, but I have repeatedly remarked, that if the slightest inflammation of a chronic kind existed in the bowels, this and every other astringent, entirely lost its efficacy. In colliquative diarrhœa, I gave the sulphate of zinc with much advantage, in doses of a grain three times a day, sometimes combined with half a grain of opium; at others I gave it alone. Hæmatoxylum, with chalk, and the Dover's powder, availed much in restraining liquid evacuations from this cause. In general, however, this disease persevered, was combined with hectic, and enlargement of the liver and spleen, and was apparently the last stroke levelled at the patient's life, which it usually put an end to, in two or three weeks. I have sometimes, in colliquative diarrhœa, succeeded in preserving the patient a few weeks, by administering preparations of iron with the bitter infusion, and more frequently still by the nitric acid. The lime water, mixed with milk, has been found serviceable, and when these failed, wine and opium have supplied their place with much effect. In these latter stages, indeed, of intermittent, the patient derived as much benefit from wine, and enveloping the body well in flannel, as from medicines. I generally had the whole body well bound up with flannel rollers, so as to support the abdominal viscera, and by preserving the heat of the part, to ensure the more successful operation of the medicines which I deemed it right to administer. The infusion of columba has often given tone to the stomach and bowels, and where this has failed, I have prescribed camphor and æther with success.

If even a case of pure diarrhœa occurred in the earlier stages of the fever, it was very apt to assume a chronic character, was liable to relapse, and at last brought on a sensibility of the bowels, which made the sufferings of the patient little less severe than those occasioned by dysentery. Patients did not, without great cause, deplore their hard fate of being frequently visited by such an exhausting disorder. The slightest exposure to cold, or the most trifling irregularity in diet, was sufficient to bring on a return, which was always

succeeded

succeeded by paroxysms of intermittent, though they had been suspended for several days.

In that kind of diarrhœa which arose from an increase of action in the vascular system, a treatment far different from either of those I have considered, was necessary. As this diarrhœa was generally combined with plethora, I took away a few ounces of blood, and gave small doses of opium, and I have no doubt, from the success following this practice, that similar means employed at the commencement of this disease would oftener be of service than the remedies usually resorted to for removing it.

When I had reason to suppose, in consequence of the stools being mucous, and suddenly voided, the gripes urgent, and sensations present bearing an analogy to tenesmus, that dysentery was near at hand, I gave the patient without delay a drastic purgative. The medicine I prescribed was gamboge, in the dose of half a scruple, which never failed to empty the bowels completely, and to produce that general excitement of the intestinal canal that abated chronic inflammation, and gave great relief. So far from the diarrhœa being increased by this active operation of the cathartic, it invariably diminished, and generally disappeared after the second or third repetition of the dose. I was latterly so satisfied of the efficacy of drastic purgatives in these chronic diarrhœas accompanied with obstructions of the liver and spleen, that I, at their first developement, instantly proceeded upon this treatment, and do not entertain a doubt, but that I frequently thus prevented dysentery from supervening. Soon after taking this medicine the patient got rid of the gripes, the healthy action of the bowels was restored, there was no uneasiness experienced at stool, and the feces became of a natural colour and consistence. If the gamboge had acted very sharply, I prescribed half a scruple of Dover's powder, or two grains of opium, to be taken at bed time.

If the diarrhœa did not yield to this practice, it progressively degenerated into dysentery, and required a long perseverance in purgative medicines, opiates, and various stimuli. The first object, even here, was the removal of scybala, and every kind of feculent matter, but this was not equally well accomplished by any purgative medicine, and sometimes not accomplished with its aid unless its operation was promoted by injections, fomentations, and warm bath. The choice of a medicine adapted to the patient's constitution, and that would produce a full effect without creating irritation, was of the highest importance. In the next place it was of consequence to keep the patient in a warm situation during its operation

operation, to cover the body with flannel, and confine him to the use of gruel, barley water, and other diluting drinks. In every stage of dysentery, as in diarrhœa, it was of service to envelope the body with flannel, but more especially when the debility was great, and the bowels required external support. By this means the local fullness and torpor of the intestines were removed, the sensations of pain and uneasiness arising from relaxation of the abdominal muscles, obviated, the ulceration of the bowels made to heal, and strength given to the universal frame.

Future remarks will shew to what extent the drastic purgatives proved serviceable in diarrhœa, and what little apprehension there was from this cause of increasing the debility with which it was connected. Dissections, moreover, taught me that in most cases of distension of the abdomen with diarrhœa, where the stools partook of varied appearances, and were intermixed with mucus, that my treatment should be commenced upon this plan.

In most instances of dysentery, the sulphate of magnesia administered in small and repeated doses, was an excellent purgative. After the bowels had been first well emptied by a full dose of castor oil, I gave half a drachm of the sulphate of magnesia every four hours, until the stools ceased to be mucous and bloody. I always found this a safe, gentle, and effectual method of removing scybala. Sometimes, however, I preferred giving three drachms of castor oil night and morning, or half an ounce every morning. With some stomachs the salts nauseated, and then I employed the ol. ricini: with others, this disagreed, and then I gave the salts, sometimes with the pil. ex hydrarg. or aromatics. I think the ol. ricini was milder in its operation than the sulphate of magnesia. I tried calomel with ol. ricini when the bowels were very torpid, but strong doses of it always gave pain, and created irritation. I was more successful in my treatment of dysentery, when I kept up a gentle and continued action upon the bowels, than when I excited a strong one, and then left the patient an interval of repose. Dysentery yielded to a plan that enabled the colon to force the scybala from its cells, and that at the same time, operated a change on the bowel itself, whereby the constriction was removed. There was no hope of overcoming the disease while scybala remained, for these produced secondary painful symptoms that augmented the primary affection of the intestine by which they were formed. Therefore, however great might be the failure of the patient's strength, purgatives were still necessary, and indeed the only medicines which could bring permanent

manent relief. Scybala have sometimes come away after the patient has for many successive days had numerous liquid stools, the griping, nausea, pyrexia, restlessness and tenderness of the abdomen, persevering till all hardened feces were expelled. Now an agreeable coolness succeeded the heat of the body, and restlessness was exchanged for repose. While the free action of the intestines was suspended by the presence of scybala, opium was scarcely admissible. A large dose of it, it is true, did at all times diminish the pain, but it encreased the torpor of the bowels, so that until purgative medicines had produced their full effect, it was better to desist from their employment. Besides, the disease was by their repetition made to augment, and debility and extenuation to increase more rapidly. When the action of the bowels required to be controuled, and it became important to procure temporary ease after the operation of purgative medicines, I did not then hesitate at any time to give a grain or two of opium. The severity of the gripes did now and then call for opium, but in general, purgatives were more effectual in allaying them. For the most part this treatment sufficed to remove dysentery when it had not yet become confirmed, and the body was not too much emaciated. It required, however, to be followed up by occasional doses of the ol. ricini, the blue pill, and the bitter infusion with sulphate of magnesia. Small doses of ipecacuanha given twice a day likewise contributed to restore the tone of the stomach and bowels.

If however, the symptoms only abated for a day or two, and then recurred with the same violence, the stools partaking of mucus and blood, I then generally made trial of mercurials, cicuta, and purgatives, so alternated as to keep the bowels completely open, and yet to excite a slight soreness of the mouth. In these cases too, I generally found it necessary to prescribe mucilaginous drinks with gum arabic, starch, and linseed, in order to defend the intestines from the acrimony of the secretions, pus, or any other acrid fluids that might have accumulated in them; collections that generally formed in the progress of dysentery, and that required appropriate means for preventing them from augmenting the irritation which was always the consequence of protracted disease. I did not give purgatives with the same freedom in the ulcerated stage of dysentery as at its commencement: so that scybala were prevented from forming, by keeping up a slightly purgative effect upon the bowels, it was all I sought, for the least excess in the use of laxatives would at this period much reduce the patient's strength, and instead of conducting him by degrees to convalescence, precipitate him into the most perilous situation.

With

With a view to determine further a uniform circulation of the blood through the abdominal viscera, than what I could effect by purgatives, I gave three grains of the pil. ex hyd. night and morning, with a grain of ipecacuanha, but not always with the benefit which I anticipated from this class of medicines. If the bowels required it, I prescribed an infusion of columba with sulphate of magnesia, to be taken at proper intervals during the day. I found the carbonate of magnesia in doses of a drachm, twice or three times a day, very serviceable in these chronic affections, the efficacy of which seemed to be increased by directing it to be taken in three ounces of the camphorated mixture. When from frequent purging, the patient's strength had become much exhausted, I gave five grains of camphor every six hours with great success, especially if I prescribed wine at the same time. If the stomach was in a state to bear the wine, no stimulus was more beneficial than it. The disorder of the intestines was never increased by its exhibition, while the tone of the stomach and of the whole system, was evidently much restored. If the passive inflammation preceding the formation of dysentery could be detected, one or two strong purgatives, the warm bath, a blister to the abdomen, and a flannel roller applied afterwards round the body, were generally sufficient to remove it, and even to avert a disease which threatened to destroy the structure of the intestines. In the early stage of dysentery marked by pyrexia, strength of pulse, and acute pains in the abdomen, I did not hesitate to draw away eight ounces of blood, a practice which proved in two or three instances very successful; but as this disease did not often indicate high inflammatory action of the bowels, bleeding could be but seldom resorted to. While dysentery consisted in vascular obstruction, there was a great probability of relieving it by the means I have mentioned; but when this derangement had produced ulceration, and extreme atony of the whole intestinal canal, when these affections seemed to be connected with hepatic disease, and obstruction of the mesenteric glands, when hectic and emaciation had supervened, this disease did not seem to be under the controul of medicine. In the more remediable kind of chronic dysentery, in which the ulceration was slight, and the intestine yet capable of being restored to healthy excitement, laxatives were the most useful remedies, but they required to be combined with aromatics. Magnesia with camphorated mixture, ol. ricini, sulphate of magnesia with aromatic confection, and peppermint water seemed the most proper. Mucilaginous drinks, and warm baths were also serviceable. But in these cases I generally gave trial to mercury. I have known three grains of

the

the blue pill taken night and morning, keep the bowels moderately open, and often relieve the patient as much as opium. The system being for the most part under a slight influence of mercury before dysentery appeared, the mouth by this dose soon became affected, but when once vascular obstruction had produced a thickening of the coats of the intestine, and had occasioned tubercles and ulceration, mercury seldom appeared to me to do much good; the most, I think, it accomplished, was an alleviation of urgent symptoms: nay, I never found mercurials superior to purgatives in removing the disease while confined to vascular obstruction. And in every dysenteric affection combined with hepatic disorder, for combined it always was, and perhaps originated in it, purgative medicines produced the best effects; hence I am inclined to believe, that even hepatic disease in many instances, may be as effectually subdued by keeping up a continued purging, as by giving mercury. If the liver indirectly produces disease in the intestines by sending into them vitiated bile, or by withholding the biliary secretion in consequence of obstruction in it, the intestines, when diseased, may derange the performance of the hepatic function, or may, when excited by purgatives to throw off the disease which oppresses them, communicate a similar irritation to that produced in themselves to the liver, which in its turn, may be now provoked to perform its function, and thus through intestinal influence, resume its healthy actions.

In the more inveterate stages of dysentery, opium became a necessary remedy, to moderate the operation of purgative medicines, to make them act with more ease, to obviate griping, and to procure the patient a respite from his sufferings, which were now generally expressed by groans, a contraction of the legs and thighs, and by a look of agony and despair that both equally removed hope from the mind of the patient and practitioner. I gave for this purpose a scruple of the opiate confection every six hours in peppermint water, sometimes with three grains of cicuta, and at others alone, or mixed with the chalk julep. Wine I also prescribed, and put the patient on a farinaceous diet containing a good deal of vegetable gluten. Milk boiled with flower, sago, or rice, was nutritive, mucilaginous, and generally agreeable to the palate, but animal food always stimulated too much, though it was often asked for by the patient.

Dr. Clark observes, that he gave from three to ten grains of calomel every night with an opiate with great advantage. In warm climates, and in early stages of dysentery, this practice may be successful, but I am very certain that in chronic dysentery

sentery as it appeared at Ipswich, calomel in this quantity would have increased the debility, and occasioned the constitution to sink, and wear out much sooner than if it had not been resorted to. Neither did I find that dysentery treated with mercury, was less liable to relapse, or that the patient invariably got well under its use when other remedies failed. Even Dr. Clarke himself has known the gripes and tenesmus return after the mouth had been affected by calomel, but remarks, that they at last subsided, and that the ulcerations of the bowels healed. Where purgatives had been rejected by vomiting, Dr. Clarke also gave calomel and opium combined, with the best effects. One of the most effectual remedies for combating ulceration, after scybala had been removed, was the nitric acid: nay, I have given it with much benefit in the earlier stages of the disease, after all feculent matter had been expelled from the bowels. If the ulceration had proceeded to a great extent, the patient's strength was fast sinking, and hectic fever, and colliquative diarrhœa, alternating with dysentery, were present, the only succour, which medicine could afford, was palliative. In this stage, as in that where ulceration was slight, the nitric acid combined with opium gave the greatest relief. It was the medicine above all others that gave tone to the intestines, occasioned the ulcers to heal, and counteracted the destructive influence of hectic fever. Indeed, I may observe, that with the medicines given for the purpose of opening the bowels, and abating pain, the nitric acid was my chief dependance in an ulcerated state of the intestinal canal; while the external means consisted in the application of flannel rollers, or the warm bath. I gave from half a drachm to a drachm of the acid in the 24 hours, diluted with water, and mixed with opium and mucilage.

It was very common for patients who had recovered from dysentery to be attacked with diarrhœa of a colliquative kind, often as difficult to overcome as dysentery in its worst stages. I have successively given in these cases, opiate confection, carbonate of lime, zinc, catechu, nitric acid, and starch glysters without benefit. Wine, spirits, opium, and a milk diet contributed the most to the patient's recovery. Sir John Pringle upon this subject observes, "I allowed the sick, meat, spirits, and wine, but from further experience am convinced that at this period of the disease, the cures would be both more frequent and speedy, could we prevail upon our patients to abstain altogether from animal food, and from vinous and spirituous liquors: for when no astringents have availed, I have frequently known the cure obtained by a milk and vegetable diet, without them." Sir John again remarks "I have

also known good effects from ipecacuanha joined to an opiate, such as two grains of that powder with fifteen of the philonium Londinense, taken twice a day. Others have received benefit from ipecacuanha alone. Dr. Huck observed, that a soldier, after getting over the inflammatory state of the dysentery, was much reduced by a white flux of the lienteric kind, and that after giving him several astringents without effect, he had at last succeeded, by ordering him six grains of ipecacuanha in powder, to be taken every morning fasting: that this man was puked by the medicine for the first three or four days only, that he afterwards took it without complaining that it made him sick."

A retrospect of my observations on diarrhœa and dysentery will shew, that both these disorders, with the exception of diarrhœa that was evidently colliquative, required to be treated by purgative medicines, and that opium in the early stages of them was improper and required to be given with caution; though in these protracted affections where palliative means could only be of service, it was called for in large doses. Cleghorn, however, generally gave opiates when he had made proper evacuations. "Every night," observes that writer, "at bed time, I give a small dose of opium, sufficient to mitigate pain, procure rest, and promote perspiration, without keeping the sick in a constant state of stupidity, or preventing a due discharge by stool, as I have seen some do very injudiciously by anodynes." I have said that where tonics appeared admissable, the nitric acid always succeeded best with me, which I latterly did not hesitate to have recourse to after proper evacuations had been employed, and even while dysentery was confined to vascular obstruction. The diet of the sick in this chronic disorder was of the highest importance. I wished it to consist of eggs, sago, milk, rice, flower, broths and wine, and generally forbade the use of animal food. Hoffman justly remarks, "It answers best to avoid such diet as would afford a large quantity of putrid, irritating excrement: to drink plentifully of mild, gentle, detersive balsamics: to give liquors of the same kind in clysters: in short, to pursue with diligence the directions given us by the great Boerrhaave in his aphorisms, with this addition, that it was absolutely necessary to give opium twice a day, in order to obtain some respite from perpetual torment, and gradually to increase the dose from half a grain to five or six, as use made it familiar: and once or twice a week, or oftener as the strength would allow, and the symptoms indicated, to hinder the acrid matter from being accumulated in the intestines, by giving glysters, cathartics, or small doses of ipecacuanha."

As

As for the relief of tenesmus, and a kind of painful irritation that remained in the rectum, even when patients were convalescents from dysentery, I found starch clysters with opium and oil the most effectual. Heberden recommends fat mutton broth with a few drops of laudanum to be injected into the rectum. I shall conclude my observations on bowel complaints, the consequences of the Walcheren fever, by quoting his remark, "Postquam vis morbi transierit, æger quanquam in tuto sit, tamen vexari solet molesta desidendi cupiditate, propter levem dolorem, qui in recto intestino manet. Huic optime medetur jusculi ovilli pinguis selibra, cui instillatæ sunt tinct. opii guttæ viginti, in alvum infusa: atque hac sola occasione censeo opium in hoc morbo tuto et utiliter dari posse. In principio certe, ventre nondum purgato, maxime noceret. Singultus accessit et aqua fœtida dejecta est, ubi dysenteria morte finita est."

One of the most common terminations of the Walcheren fever which I have to speak of is dropsy. Protracted fever produced enlargement and obstruction of the abdominal viscera which ended in ascites. It occasioned debility which induced anasarca: and it sometimes directed its force against the lungs and brain, bringing on hydrothorax, or a dropsical state of the substance of the encephalon. The symptoms which announced the approach of ascites, or anasarca, were extreme debility, œdema of the legs, shortness of breathing, paleness as well as bloatedness of the skin, softness of the muscles, suppression of the urinary secretion, induration of the hypochondria, and œdema of the face and body, coming on after a paroxysm of ague, and disappearing in the course of a few hours. The indications of dropsy having commenced in the *cellular membrane*, were a soft colourless inelastic swelling in the legs and feet, increasing towards night and extending up the thigh, a swelling of the eye-lids, bloatedness of the face and upper extremities, continued thirst, high coloured urine, shortness of breathing, quick weak pulse, anorexia, white tongue and disturbed rest. Such appearances and phenomena as these, after having continued two or three weeks, were succeeded by œdema of the whole body, whiteness and softness of the skin, an effusion of water into the abdomen, or the chest, and were sometimes combined with great enlargements of the spleen and liver, and not unfrequently with a dysenteric affection. When the patient had been disposed to bowel complaints throughout the whole progress of the fever, he generally died dysenteric; but if the consequences of intermittent were confined to disease of the liver and spleen, and extreme debility ensued, he more generally

generally expired with dropsy. I have known dysentery to be combined with ascites, but for the most part the dysenteric patient was not dropsical, and he who had dropsy, was not dysenteric. When anasarca prevailed, the patient before he died, became also oppressed with water in the cavities of the abdomen and thorax. All these varieties of dropsy have succeeded each other, nay they have been all present together, and the patient still has been attacked with severe paroxysms of ague. The prognosis in these cases, was of course bad, for though the water has been repeatedly carried off, succeeding attacks of intermittent never failed to end in fresh effusions, hence the patient for the most part sunk under the pressure of complicated disease. No situation of a patient was so entirely hopeless as that where ascites and anasarca were combined with dysentery; for the medicines which abated one affection, only served to aggravate the other. The prospect of recovery was not altogether so gloomy when anasarca alternated with ascites, when there was no bowel complaint, and the spleen had not been converted into an abscess. Long before ascites took place, the abdomen was tense and hard, and considerably inflated; but as that disease advanced, the belly grew uniformly large all over, became prominent, heavy, and at last gave a fluctuating sensation to the hand when it was pressed. However it was rather difficult to conjecture the extent of the effusion, for the viscera were generally hard and large, and the abdominal cavity tense, from the inflated state of the intestines, circumstances which deceived the practitioner when he examined the abdomen with a view to determine this point. Where no bowel complaint prevailed, the intestines were generally very torpid, the appetite indifferent, digestion bad, and such was sometimes the pressure exerted by the water against the diaphragm, that the patient had an incessant cough, and was in danger of suffocation.

The approach of hydrothorax was sometimes gradual, but oftener sudden and unexpected. A patient with protracted ague, and the appearances I have described indicatory of a dropsical tendency, frequently complained of having disturbed sleep, and started up occasionally in the bed from a sense of suffocation threatening his existence. He could sleep on one side only, was troubled with a sharp, frequent cough, and generally inclined his body forward when he sat up, or put himself in bed. His respiration became laborious, his countenance œdematous, lips livid, and pulse intermitting, symptoms that were soon succeeded by death. In all such cases, a large quantity of water has been found upon dissection

tion

tion in either or both cavities of the chest, and in the pericardium, and sometimes in the ramifications of the bronchiæ and the cellular substance of the lungs. But these phenomena indicatory of effusion in the thorax have not always come on gradually, and been combined together; for they sometimes, after a severe paroxysm of ague, invaded suddenly and with severity, putting an end to the patient's life in thirty-six hours. Nay, I have known men who were convalescents, attacked unexpectedly with a paroxysm of ague, which has terminated in effusion into the chest, and quickly destroyed the patient. There were no particular symptoms denoting effusion in the pericardium, for those which developed themselves in this affection were common to hydrothorax. Besides, hydro-pericardii coming on gradually, and being connected with extreme debility of the system, and impeded respiration, the result of irregular circulation in the lungs, there was great difficulty in ascertaining from symptoms whether this disease existed or not. The pericardium has been found to contain ten, twelve, and thirteen ounces of serum, when the patient had not been known to have a single symptom indicatory of its presence, and in other instances there has been a combination of phenomena that favoured the opinion of fluid being effused in the pericardium, when, after death, little serum has been detected in this membrane, but many ounces, nay, a pint or more of fluid has been found in the cavities of the chest. If the patient complained of tightness across the præcordia, palpitations, and other irregular motions of the heart, experienced difficulty in lying in a horizontal posture, and feeling when he attempted to do so, a sense of suffocation, and a tickling kind of cough, there was a strong presumption of water being contained in a large quantity in the pericardium. Often however, these symptoms appeared to be occasioned by general dropsy, and were not solely referable to hydro-pericardii. In two or three instances indeed, this disease was decidedly marked in the concurrence of the phenomena I have mentioned, the small, and sinking feel of the pulse when pressed upon, and in the weight and undulation which the patient experienced in the left side of the thorax. Senac says that a certain sign of hydro-pericardii is an undulatory motion felt between the third and fifth ribs, but however certain this may be, or easy to ascertain in idiopathic disease of this membrane, it is by no means an experiment to depend upon in an affection which is the consequence of another disease, and which seldom becomes so evident as to be perceptible to the touch. For this trial to succeed, it is necessary that the contained fluid should press forcibly

forcibly against the ribs, and that there should be a large quantity of it to resist the finger, so as to give the idea of fluctuation. The dry cough mentioned by Reimanus to be so characteristic of effusion in the pericardium was by no means a constant attendant upon this common affection. If there was much effusion I think the pulse led to a knowledge of it by the feeble, sinking sensation it opposed to the finger, but I am not certain of the accuracy of this remark of Albertinus. "Pulsus igitur comparate molles potius frequentes ac parvos sibi adjungere consuevit, ubi structura cordis, sive immodice flaccida evaserit, sive hic illic in suis fibris incesserat fracescere, sive restagnans in pericardio, humor lentus sive mere aqueus sit. Parvos vere frequentiores adhuc vibratos ac tensos, cum sapor ejus salinus et vellicans est. Exiles etiam celeriores deficientesque, si tanta humoris copia in pericardio contineatur, quanta fere maxima continere in eo potest, a ea pulsus inequalitas aliis cordis vitiis communis est."

The best method we have of deciding whether hydro-pericardii does exist, is that practised by Dr. Monro. A diagnosis, this physician remarks, is to be obtained by putting the heart in a situation that is unnatural to it, which may be easily done by changing the posture of the body. If the body be bent forward, when there is water in the pericardium, Dr. Monro says, that the pulsations of the heart will be felt as usual by putting the hand to the left side of the chest, but if the body be bent backwards, the heart will recede, and its pulsations, owing to the bulk of the water, no longer be perceptible. This seems to me by far the least fallible way of judging of the presence of water in the pericardium. The symptom of difficulty of breathing in lying down is certainly very equivocal of the existence of this disease, for that may arise from some organic affection of the heart, or may be occasioned by water in the abdomen. Intermission, and irregularity of the pulse are common to hydro-thorax, and hydro-pericardii. Graetzius declares that there are no symptoms which can enable us to distinguish between these affections. "Se pene ulla," he writes "deprehendere signa, quibus hos duo hydropes distinguere rite possit, etiam exercitassimus medicus." I must think there is much truth in this observation, still in idiopathic disease a correct diagnosis may often be obtained.

Sometimes the quantity of serum effused into the cavities of the thorax was so great that the patient could easily feel the fluctuation when he changed his posture; but hydro-thorax, like hydro-pericardii was not an idiopathic disorder. If water was contained on both sides of the chest, the patient experienced

enced great difficulty in putting himself into a recumbent position; if it was confined to one cavity, he generally lay upon the side on which effusion had occurred, leaving, by this means, the other lobe of the lung free from pressure for the easier performance of respiration.

To judge of the frequent recurrence of hydro-pericardii by dissections, I should say that it was almost an invariable termination of intermittent. Even in those cases where no local or general dropsy took place, and the patient expired from debility, or some other consequence of the fever, the pericardium always contained ten, twelve, or more ounces of serum. A portion of this fluid might, no doubt, be exhaled after death, but I cannot help thinking, that the greater part of it was thrown out before this event happened. I furthermore suppose that the effusion occurred suddenly, and at the moment when debility prevailed the most, as patients have been totally free from any of the symptoms indicatory of its presence, before a paroxysm, and seized with the symptoms common to hydro-thorax and hydro-pericardii quickly after its termination.

In addition to these dropsical affections there was another which was seated in the cellular substance of the lungs, I mean anasarca pulmonum, a variety of the disease almost as often met with upon dissection as hydro-pericardii. In this species of dropsy, difficulty of breathing came on gradually, and was preceded, like other dropsies, by general paleness and softness of the skin, a bloated appearance of the countenance, and œdema of the legs. But it was to be distinguished from hydrothorax by its more slow and insidious approach, by the progressive increase of difficulty of breathing, and by there being no weight or sense of fluctuation in either cavity of the thorax. When this species of dropsy acquired an alarming height, the pulse grew feeble and irregular, the lips livid, the eyelids tumid, the whole face bloated, and the extremities cold. At this period too, there was much uneasiness in the chest, a frequent cough, and slight expectoration, but the same difficulty was not experienced in lying down as in hydrothorax. Anasarca pulmonum now and then supervened in general dropsy, but often existed without anasarca, and sometimes appeared to be the sole dropsical affection. It was occasionally combined with inflammation of the lungs, and at other times appeared where there was not the least vestige of this disease having existed. However, a very general appearance of the lungs in anasarca pulmonum was ecchymosis, consisting of numerous small red spots distributed upon, and

in

in the substance of the lobes. In all these cases, the lungs when divided with the scalpel gave out in abundance an aërated fluid, one while intermixed with blood and mucus, or else, being thin, like serum, and of a frothy nature. Half a pint, or a pint of this fluid sometimes issued from the lungs. A portion of them taken up and slightly squeezed, gave out serum, similar to a sponge soaked in water, and pressed between the fingers. The weight of the lungs thus distended with water was considerably increased, and their volume so much greater than natural that the cavities of the chest were entirely filled with them. Anasarca pulmonum was more frequent than hydrothorax, and of a less remediable nature. It was not until ecchymosis had terminated in effusion, or that transudation of the finer parts of the blood, during its interrupted circulation through the lungs in a paroxysm of ague, occurred in the cellular texture to a certain extent, that the lips grew livid, the pulse became intermitting, the respiration intercepted, and other symptoms of approaching suffocation supervened. The ostensible cause of anasarca pulmonum was ecchymosis, but as the pulmonary like the aortic circulation became very irregular from a variety of causes, it is not improbable that the return of the blood through the pulmonary veins being obstructed, a transudation of its finer parts took place in large quantities, and hence an accumulation of serum in the cellular texture of this viscus.

I have next to mention that the cavities of the abdomen and thorax, the pericardium, and cellular substance of the lungs, and of the whole body were not the only seats of dropsy. Besides these, the brain was frequently found in a dropsical state, and its ventricles were distended with water. From between the meninges, there has often issued several spoonfuls of serum, and the brain itself has been so soft as not to admit of being cut with the scalpel. A transudation of the serosities of the blood through the pia mater appeared to be as frequent as transudation into the cellular substance of the lungs. I presume the softness of the brain, and its conversion into a gelatinous kind of substance, are to be referred to a redundance of aqueous principles in this organ, occasioned by the same general causes as dropsy of other parts of the system. I have very often observed marks of inflammation of the pia mater, and met with layers of coagulable lymph between the meninges where water was effused; but the brain has been found to possess unusual softness where no effusion had occurred in the ventricles, or between the pia and dura mater. The frequency of these occurrences shews that a dropsical state of the brain,

as

as well as of the lungs, abdomen, and cellular substance, were terminations of the Walcheren intermittent, and each the consequence of certain states of the system giving it the power of pouring out water with greater or less suddenness, according to circumstances, into the various cavities. As all those patients presenting this appearance in the head upon dissection, had been attacked with coma which alternated with delirium, it is probable that the first of these was owing to effusion taking place between the meninges, or to the soft, and watery state of the encephalon. I do not suppose that coma arose from this cause in the early periods of the fever. A want of the due excitement of the cerebral organ, or plethora of the sinuses might well enough account for it in the beginning. The degree of danger attached to the patient's situation in dropsy of the brain, was by no means inferior to that which arose from anasarca pulmonum. The establishment of either of these diseases was a summons for the patient to his tomb.

The plan of treatment which I latterly adopted in the Walcheren intermittent was the best which could be pursued in dropsy, and, I may add, often prevented this termination of the disease from taking place. Purgative medicines, consisting of elaterium, gamboge, and the super-tartrate of potash. were interposed every fourth or fifth day as long as the accumulation of water in the abdomen seemed to indicate the necessity of their employment.* I administered these medicines in every kind of dropsical affection, giving on the intermediate days bitter infusion with the subcarbonate, and acetate of potash, small doses of calomel and squills, sometimes the digitalis, and at others the super-tartrate of potash, while I allowed the sick, gin punch as a common beverage. By these preparatory means I was enabled soon to recur to the use of

* Illud vero admonendi sunt, quotquot purgatione alvi opem ferre his ægris student: eorum vires morbo suo multum fuisse imminutas, ideoque non esse perseverandum in medicamentis valentioribus. nisi manifestum fuerit ægros inde levari, vel saltem non lædi. Ubi hydropicus par sit ferendo tam validum remedium, solitus fui dare elaterii granum unum, vel duo, quod commode sumitur ex cochleario spiritus vini tenuioris. Hoc, si nullos insolitos tumultus excitet, et venter multum a quo excernat, quarto quoque mane dare oportebit, donec omnis humor supervacuus exierit: at diebus a purgatione liberis medicamentum aliquod amarum et aromaticum erit sumendum. Hac ratione medendi quatuor vel quinque asceticos restitutos novi; e quibus unus vixit sanus quatuordecim annos. Idem fere valet gambogiæ semi scrupulus. Quanquam magnitudo hujus morbi magnum remedium postulet, id tamen sæpe numero ægri vires sustinere non possunt: in quo casu confugiendum est ad ea quæ lenius alvum solvunt, quæque movunt urinam. Ad hoc utilis est scillæ radix, cujus tot grana sumenda sunt, quot stomachus sine nausea recipere valet." (Heberden.)

the bark, if the frequency of the paroxysms absolutely required it, or what was often more effectual, when the paroxysms were of rare occurrence, to the carbonate of iron with ginger. If visceral disease was very extensive upon the invasion of dropsy, and the patient much exhausted, purgatives, diuretics, and tonics only had the power of palliating the dropsical complaint, and postponing for a short time the fatal period. I have, it is true, unexpectedly known ascites yield to this treatment, when, *à priori*, there was every reason to suppose from the magnitude of visceral disease, that the dropsical affection never could be subdued. It has now and then disappeared under the combined operation of calomel and Dover's powder. Nay, mercurial frictions, by reducing the enlargement of the liver and the consequent pressure on the vena portarum, whence proceeded serous infiltrations into the abdomen that formed ascites, have, in several instances proved successful. The most efficacious way of proceeding, however, in all these cases, was to evacuate in the first instance the effused fluid by purgative and diuretic medicines, and then to strengthen the tone of the solids, by giving vegetable and metallic astringents. Benefit has been found to be derived by the combination of gamboge with the sulphate of iron, thus evacuating and giving tone to the system at the same time. The only advantage obtained from tapping, was the prolongation of the patient's life a few days. I am friendly to the earlier performance of this operation than is customary, before the patient is reduced by long sufferings, and the magnitude of visceral disease.

I pursued the same general plan of treatment in anasarca as in ascites, with the addition of dry friction, or, if the skin were irritable, with oil, in which squills were infused; digitalis, calomel, squills, the acetate and subcarbonate of potash, with purgatives and tonics were the other principal remedies I resorted to. I found the digitalis and the subcarbonate of potash combined, more useful than either singly, and the first was always followed by greater benefit in hydrothorax than in anasarca or ascites, no doubt, from its retarding the circulation in the lungs. This dropsical affection, however, was always best relieved by large blisters to the chest, and strong purgatives. I have too known the blue pill with digitalis serviceable, and if the cough was very troublesome, the Lac: Ammon: with Aq: Ammon: Acet: had its advantages. The blue pill and Dover's powder after proper evacuations had been made, were sometimes serviceable. I relied much upon Dover's powder at night, and the subcarbonate of potash with the bitter infusion, during the day. I also placed the Spt. Æth: Nit. and the Spt. Æther Vit: Co: amongst the auxiliary remedies, I thought

thought it adviseable to have recourse to*. Dr. Gregory says, that blisters and issues are of service in incipient hydrothorax. I certainly found the former useful in various instances, but of the efficacy of the latter, I had no opportunity of judging.

If hydrothorax arose from a dropsical diathesis, it might now and then be successfully combated by the means I have detailed, but if it originated in pneumonia, the case was universally hopeless. Although proper regard was to be had to the patient's strength, yet, when pneumonia occurred, there was no chance of averting its fatal termination but by venesection. Unless one or two copious evacuations of this kind were made the instant the number and violence of inflammatory symptoms of the lungs made it necessary, nothing could ever recover the patient from the impending peril, which menaced him. It was extremely difficult to determine whether slow inflammation of the lungs obtained, for this has been known to exist to a great extent, as was proved by dissections, without its ever having been noticed by the physician, or known from the severity of symptoms, even to the patient. However, experience taught me to watch with great circumspection the invasion of cough and pyrexia, and, whenever these came on with shortness of breathing, and slight uneasiness of the chest, often entirely disregarded by the patient, either to recur to the lancet, or purge actively and apply blisters to the chest, to keep the patient cool and confine him to bed, to allow him only water gruel, barley water, and milk sweetened with honey, until the breathing became free, and pyrexia and the cough subsided. In the debilitated state of the sick at Ipswich, the confused and complicated nature of affections of the chest, and the anomalous symptoms continually springing from the original Walcheren fever, its consequences and complications, it required much judgment to determine on the propriety of venesection which was always a hazardous remedy in this protracted fever. These were the cases in which I gave the digitalis with freedom, in doses till it lowered the pulse, and sensibly affected the system. If the practice I have mentioned were sometimes delayed for a few hours only, effusion into

*"In hoc numero sunt balsama acriora, quorum scrupulus bis quotidie sumtus est; item kali præparati tantundem in aqua, aut in vino dissolutum. Hoc pulchrius multo remedium est, quam quod habet cineres herbarum ex vino liquatos: quippe eorum vis non continetur in terra fatua, verum in salibus alcalinis, quibus hi cineres abundant, cum aliqua simul portione salium neutrorum, quos multæ plantæ crematæ exhibent. Parem facultatem habere existimantur Spiritus Ætheris Nitrosi, et Tinctura Cantharidis; hujus guttæ viginti, illius drachma, ter quotidie adhibetur." (Heberden.)

the

the cavity of the chest, or the ramifications of the bronchiæ ensued, putting a sudden end to the patient's life. The more manageable kind of hydrothorax was that which arose from sudden effusion into the chest, after a severe paroxysm of ague, an event that I have repeatedly observed to take place, and I must acknowledge, for the most part, with fatal consequences. The most energetic measures were called for, whenever this termination happened, which consisted in drastic purging, mercurial frictions, extensive blistering, and in the employment of diaphoretics with squills and ammoniacum. In two of my patients effusion into the chest occurred twice, which I twice succeeded in removing by this active practice. The patients required for days to be put upon the most slender regimen, and sometimes stood in need of opiates to allay the cough. After being thrice purged by elaterium, they ultimately recovered of these attacks under the joint influence of digitalis and the supertartrate of potash. Hydrothorax which came on gradually in consequence of a dropsical diathesis, or which succeeded pneumonia generally destroyed life. The alkaline diuretics appeared to me to be very serviceable in this and various other affections of the chest. Baglivi says in allusion to their efficacy in diseases of this part. " Pluries adnotavimus nempe in morbis pectoris semper ducendum esse ad vias urinæ natura id monstrante, necnon magnum consensum inter tibias et pudendum et pectus, morbosque harum partium ad invicem commutari." When the secretion of the bronchiæ became checked from any cause, Hippocrates prescribed an emetic. " Si pro ratione," he observes, " expuere non valet æger, ex medicamentis sursum educentibus data: quod si spatum non probe expurgetur, et spiritus fuerit frequens, et purgatio non prævaleat, prædicendum est nullam spem vitæ reliquam esse, utique si purgatio nil efficere possit."

The jaundice was a disease of frequent occurrence in the course of the progress of the fever of Walcheren. For my own part I never had recourse to any particular remedy for the treatment of this affection. Patients who had this disease were generally under the influence of mercury or purgatives, in order to reduce the visceral obstructions with which it was for the most part combined, hence no new remedies seemed to be called for, as the abatement of the one disease was followed by the disappearance of the other. It was Bricklesby's practice to attempt the cure of jaundice supervening on obstruction of the viscera, by vomits and the neutral saline mixture, which he said relieved this symptom in most of those by whom they were taken. It was necessary, he further observes, to add diuretic salt, unless a spontaneous purging came on, and

and with the termination of the fever, carried off the suffusion of the bile which has often tinged the skin of the deepest yellow, and sometimes blackish colour, as happened in the autumnal fever of 1758 in the Isle of Wight, and I may add, as occasionally occurred at the latter end of intermittent in the sick at Ipswich. "Some patients," he writes, "after the fever was entirely cured, still retained the jaundice, and this was often followed by œdematous swellings in the legs, and of the other extremities. In these cases, it was necessary, besides a vomit every third or fourth morning, to give rhubarb and a little calomel sometimes in the intermediate days of the vomits, besides the diuretic salts already recommended. I often found a whole ounce of soap taken every day, carried off the yellow colour and the œdematous swellings at the same time."

SECTION VIII.

PNEUMONIA AS A COMBINATION WITH THE PRIMARY DISEASE.

The preceding observations lead me to speak of a peculiar kind of inflammation of the lungs with which many of the sick were seized at Ipswich. Exposed to various causes concurring to produce pneumonia after a long continuance of the Walcheren intermittent, patients were first attacked with a cough and continued pyrexia, but of so slight a kind that it attracted but little notice. Gradually however the breathing grew short, the cough increased in severity, an oppression was perceived at the chest, and the pyrexia became more violent, yet the pulse remained at 90 or 95, and was often soft. In the progress of this pneumonic affection, the pulse grew feeble and irregular, sometimes very quick. After seven, eight, or nine days, the patient complained of experiencing great difficulty in breathing, of feeling a dull pain over the whole chest during the dilatation of the lungs, and was seized with sudden fits of coughing, but only expectorated a small quantity of viscid fluid, sometimes intermixed with blood. Even when these symptoms gave a character to the disorder, the pyrexia sometimes became mild, and the pulse retained its natural softness. The patient could lie on either side, but he generally placed himself upon his back. Pain never was acute in the chest, though when it became rather more severe than usual the pulse grew hard and quick. The most alarming symptom

tom attending it, was the great impediment which ocurred to respiration. With a soft pulse at 100, and slight pyrexia, I have known the respiration to be so hard and sonorous, that it might be heard in an adjoining ward. When this was the case, the countenance was blue and livid, the lips black, the oppression at the præcordia extreme, the extremities cold, and the thighs and body interspersed with spots of a dark purple colour. Thus, from a disease apparently mild in the beginning, and mild till three or four days before its fatal tendency became manifest, did the most alarming symptoms unexpectedly declare themselves, and confirm the little supposed fact of the lungs having undergone the most irremediable alteration. Many patients were admitted into the hospital with catarrh combined with the Walcheren intermittent, and its usual consequences: some came in with pneumonia upon them, but the affection of which I am now speaking was neither preceded by catarrh, nor any active inflammation of the thoracic viscera. Its diagnosis in the beginning, if such these symytoms might to be considered, consisted in a dry hollow cough, oppression at the præcordia, and slight shortness of breathing, which now and then became rather more severe. This peculiar inflammation of the lungs was frequently followed by effusions in the chest, when the symptoms were so nearly similar to those of hydrothorax, that it was almost impossible to know which of the two diseases were present. I am not certain indeed that the two were not often combined. Patients who had even the milder symptoms of this disease were to be considered in danger. I particularly noticed one man who came into the hospital with a dry hollow cough, a slight uneasiness in his side, and whose breathing was so little affected as scarcely to be perceived by me, and even to be disregarded by himself. After a day or two he grew hoarse, and complained of oppression at the chest. His respiration was now evidently very short, and he had slight pyrexia. I begged of him to lie down, which he did, but he could not remain in a horizontal posture from a dread of suffocation. In the course of the progress of this disorder, he was obliged to bend his body forward like a bow, for in no other position could he breathe without experiencing the greatest pain in his left side. He was bled twice, but without avail. Pyrexia encreased for a few hours, but was succeeded by coldness of the whole body; his pulse, which had been soft at first, and then hard, intermitted and became tremulous, his breathing was performed with a snorting kind of noise, his face became livid, he grew delirious, and expired in a state of complete suffocation.*

* See Dissections.

The

The patient only expectorated a little viscid mucus now and then intermixed with blood. Perhaps it is on account of the slight expectoration which accompanies this disease, that serous effusions in the chest, are so frequently combined with it. The disease I am detailing, was shewn by dissection to consist in its beginning in ecchymosis of the lungs, in a kind of gradual congestion of the vessels of the diseased part, terminating in a rupture of them, and by the admission of the extravasated fluid into the cellular texture, and a change in the structure of the lungs, converting them into a substance precisely similar in appearance to the liver, when cut into with the scalpel. In the early stages of the disease, the lungs were completely spotted over with small red specks, and were darker than usual, they next lost their spongy texture, then became condensed, firm, and so compact, as effectually to resist the passage of fluid or of air through them.

In general, the face was very œdomatous in this disease, of a red, livid, and blackish colour alternately. It rarely happened that the cough attending it was moist, unless a slight effusion of serum had been made into the bronchiæ, in which case expectoration freely ensued. The fatal termination of the disease appeared to be averted for a time in a copious expectoration, by which the congestion of the vessels was relieved. It is worth remarking, that though disease of such magnitude was going on in the lungs, the constitutional ailment was sometimes so slight, as for the patient not to be deranged by it, till a few hours before his death. Nevertheless by careful examination, the lungs might in most instances, be observed to be the seat of much disease, as dyspnœa, cough, and uneasiness in the chest, often evinced. Adhesions to the pleura, and effusions of coagulable lymph on the lungs degenerating into a crusty sort of substance were very frequent. I believe that pains in the spleen were often mistaken for pleuritic pains, and occasionally were combined with this disease of the lungs. There could be no doubt of this disease having been of long standing in many instances, yet suppuration scarcely ever ensued in the lungs. When this organ became extensively diseased, and the patient was suffering more from this cause than from intermittent, and its consequences, the paroxyms of the fever were entirely suspended. Continued pyrexia, and sometimes hectic, with severe exacerbations, came on in their place, giving a confused character to the febrile affection connected with the disease of the lungs.

I have known cases end fatally from effusion in the bronchiæ where, from symptoms before, and appearances after death, there was no reason to suppose any great inflammation of the lungs

lungs had ever existed. Ecchymosis was the only unusual appearance that could be detected, which, I must observe, did not seem to be confined to the surface of the lungs, but to penetrate into their substance. Dr. Cullen remarks upon this subject, "nay, it is even probable, that, in some cases such an effusion may take place without any symptom of violent inflammation, and in other cases, effusion taking place may seem to remove the symptoms of inflammation which had appeared before, and thus account for those unexpected fatal terminations which have sometimes happened." That such an effusion taking place in cases of ecchymosis was the cause of the sudden increase of symptoms and of death, I have not the least doubt, though the inflammation which preceded was slight, and almost unnoticed. Very often, I believe, effusion in the bronchiæ, and effusion in the cavities of the chest occurred at the same time. It was the misfortune of this disease to have no favourable termination, when it had once declared itself formidably. It would abate for a day or two, and then return with increased violence, but the abatement of dyspnœa and cough was never permanent, hence every amendment proved fallacious. In ordinary pneumonia, certain evacuations prove critical, but in this disease hæmorrhagies from the nose, which were very frequent in the Walcheren intermittent, did no good; a diarrhœa or a copious deposit in the urine suspended for a moment, its severity, but the symptoms soon recurred with their former violence. I never saw any thing like metastasis, neither did erysipelas which has been often looked for in pneumonic affections with some anxiety by practitioners, ever come to the patient's relief,*

I am

* I am persuaded that there are many varieties of pneumonic inflammation which require the nice discrimination of the practitioner. Besides pneumonia as it more commonly occurs, there are as Huxham has accurately observed, "very different degrees, nay species, of this disease which demand a particular attention, and a method of cure peculiarly adapted to each. For a peripneumony arising from a violent inflammation of the lungs by a very dense blood obstructing very many of the pulmonic and bronchial arteries, is a quite different disease, and requires a very different treatment from an obstruction of the lungs, by a heavy, viscid, pituitous matter: as is the case in what late writers call a peripneumonia notha, and this again should be managed in a method very different from that which is proper in one depending on a thin acrid defluxion of the lungs. And yet there are some general symptoms common to them all, particularly a load at the breast, a short difficult breathing, a cough and more or less of a fever: which few obvious symptoms however give the general denomination of the peripneumony, though in nature very different, and to be treated very differently."

It is observable, says Huxham, that some epidemic agues, in some constitutions, at first put on the appearance of continued fevers, and then break into quotidians or tertians, and it is not uncommon for a quotidian or tertian to be changed by a very hot regimen at the beginning, into an inflammatory fever

I am totally at a loss to know the acquired predisposing causes of this disease, unless they may be attributed to some peculiar state of the system established by the long continuance of the Walcheren intermittent relaxing the pulmonary vessels as well as those of every other part of the body. The exciting causes consist in the blood's irregular circulation through the pulmonary system, and in alternate exposures to heat and cold. Sometimes pneumonia has been singularly connected with fever, and prevailed epidemically, but this however was not the case with the pneumonia I am speaking of. Pneumonia never was symptomatic of the Walcheren intermittent, as it sometimes is of measles, catarrh, and phthisis pulmonalis, but was combined, and interwoven in a particular manner with it, so as apparently to constitute a part of the same disease.

It is proper here to remark that a similar condensation of the substance of the lungs did not occur in every instance. Sometimes the lungs were inflamed and distended with blood, as they usually are in pneumonia, and when washed many times, became almost of their natural colour and porous texture. Usually however they were so dense, and of such a solid consistence as to have lost all their natural appearance, and to remain red though repeatedly washed and soaked in water. At other times they were of a dark purple colour in places only, but firm, while in some cases ecchymosis on the surface appeared

fever with frenzy, or peripneumony. So that the constitution of the solids and fluids, in some kinds of agues seems not greatly different from that of inflammatory fevers." Again, sometimes quotidian, quartan and tertian fevers, are very rife and contemporary with epidemic pleurisies, and peripneumonies, as particularly in 1744. The cold season in some constitutions bracing up the fibres so high, and condensing the blood into such a degree of viscosity, as to bring on these inflammatory fevers on taking cold, or other accidents, whilst, on persons of a more lax system of nerves and fibres, and more weak watery humours, it only raised the powers of the oscillatory vessels so high, and warmed the blood so much, as to carry off the ill consequences of deficient perspiration, and ropy heavy juices, by repeated fits of a regular intermittent. Thus we often see persons of low spirits, and a lucophlegmatic habit of body raised into a feverish disposition by the use of warm invigorating medicines, chalybeates, &c. And if this turn of nature be well managed it generally ends in their perfect recovery. If you can change a slow nervous fever into a regular intermittent, you soon cure your patient."

"But further, I have more than once known pleurisies, peripneumonies, and inflammatory rheumatisms, reign very much in a cold, dry spring, and a great number of intermittents succeed them in the following warmer months, the heat abating the rigidity of the fibres, and resolving in some measure the viscosity and density of the blood: whereas had the solids continued more tense, and the blood more dense and viscid, inflammatory fevers would have been the consequence, on taking cold or the like, which now only produced an aguish disorder."

so constitute the principal change. I shall here quote a passage of much interest from Huxham, and to the point I am speaking of. "In some very violent peripneumonies, where both the lobes of the lungs are greatly inflamed and obstructed, an immediate and excessive weakness comes on with an expressible anxiety and oppression at the breast, a very small, weak, trembling pulse, coldness of the extremities, with clammy coldish, partial sweats, the eyes staring, fixed and inflamed, the face bloated, and almost livid; and all this soon followed with stupor, delirium; and I have seen in some cases (though few indeed) with a complete paraplegia. This is in truth a very dreadful case, but does not arise from want of blood, but from the want of a due circulation, and distribution of it. For being so many and great obstructions in the branches of the pulmonic artery, the blood is pounded up in the lungs, and hindered from passing freely, as it ought, from the right ventricle of the heart to the left, so that the aorta, and its branches do not receive blood enough to carry on the common offices to life, on which soon follows an absolute stagnation and immediate death. Dissections have shewn this to be the case, the lungs have been found quite stuffed up with concreted blood, red, hard, and as it were fleshy, or rather of the colour and consistence of liver, and so heavy, that any part of them, cut off, sunk in water.* If any thing can be done in this most deplorable case, it is by early and immediate bleeding, or it becomes in a very few hours utterly irrecoverable. I have seen some surprisingly good effects from bleeding in both arms at once, when done in proper season."

In the treatment of this species of pneumonia precisely the same remedies were called for as are commonly resorted to in every kind of inflammation of the lungs. It is needless therefore to dilate upon a practice universally known and acted up to. The propriety of blood-letting in this affection, I have already hinted at; it only remains for me to say that it was not to be employed until evident signs of inflammation existed, and that much discrimination was required to ascertain them, for a precipitate use of the lancet induced weakness unnecessarily, and the delay of it was the cause of the disease running on to a fatal tendency.

* Vide Hoffman, de febribus Pulmonicies, obs. 1.

SECTION IX.

MORBID ANATOMY—PARTICULAR AND GENERAL DISSECTIONS.*

No. I. T. W. Lungs small and condensed in both cavities of the thorax, appearing when divided with the scalpel, to be of a darker colour than natural, and exhibiting numerous vestiges of slight inflammation. The right lobe was more inflamed and condensed than the left. In the right cavity of the thorax there was nearly a pint of serous fluid. The heart was healthy, and the pericardium contained no more fluid than usual. The omentum was small, and of a dark colour. The stomach was very white, and distended with a fetid gas; in it there were several tea spoonfuls of dark green fluid resembling bile. Intestines healthy. Liver and spleen considerably enlarged. Gall bladder greatly distended with dark bile, of the colour and consistence of treacle. The head of this subject was not inspected.

Remark. The man was Dr. Williams's patient.

No. II. E. M. Intestines of a dark colour and distended with air. Stomach remarkably small and contracted, containing several ounces of dark green fluid. Liver very large, and so hard as to require considerable force to divide it with the scalpel. Its right lobe was harder than the left, and when sections were made into it, no fluid resembling bile was observed to trickle down it. There were two tubercles in this lobe, of the size of a walnut each. The gall bladder contained only a teaspoonful of bile, similar in appearance to bird-lime. Spleen large and hard. Urinary bladder distended with urine and exceedingly red on its inner surface. Lungs and heart in appearance healthy. In the pericardium there were several ounces of water.

N. B. The head of this subject was not inspected.

Remark. This patient was brought into the hospital with a hot skin, hard dry tongue, wildness of the countenance and suffering under great perturbation of body and mind. There was no remission of these symptoms until the moment of his death, on the contrary, pyrexia and delirium became more severe. The immediate cause however of his dissolution, was a col-

* The dissections at Ipswich were conducted in the presence of some or all of the following gentlemen. Dr. Tice, physician to the forces, Dr. Davis temporary physician to the forces, senior physician to the south hospital, Dr. Monteath surgeon of the Northumberland regiment, and Mr. Bennet, surgeon of the Derby militia.

liquative

liquative diarrhœa. I saw him twice; the case was considered to be typhus. I could not ascertain the manner of the invasion of the disease, nor do I know any particulars of its history. He was Dr. Williams's patient.

No. III. T. W. Liver dense and of a dark purple colour, Gall bladder distended with dark green bile. Spleen large, diseased, and adhering to all the surrounding parts. The small intestines were of a very dark colour and thickly covered with turgid blood vessels. Their inner coat was nearly black; the jejunum however is excepted, which was much contracted, thickened, of pale colour, and empty. The other intestines contained a dark green viscid fluid. The mesenteric glands were considerably enlarged.

N. B. This dissection was communicated by Mr. Bennet surgeon of the Derbyshire militia.

Remark. This man was in the hospital only three days. On his admission, his tongue was observed to be furred, black and dry: his pulse frequent, skin moist and clammy. He was extremely emaciated, had diarrhœa and tenesmus. His skin was of the natural colour: and his eyes glassy. He complained of slight pain in the left hypochondrium, and of being thirsty.

No. IV. W. D. Ætatis 17. Robust. Came into the hospital with anasarca. Liver apparently healthy. Bile of a deep green colour and viscid. Abdomen distended with water, in which jelly-like lumps of coagulable lymph were floating. The cellular membrane about the right kidney and mesocolon was very much distended with coagulable lymph. The colon was considerably contracted and contained white feces. The spleen of its natural size and very little altered in structure. A considerable quantity of coagulable lymph was effused into the cellular membrane in front of the trachea. There was not any œdema of the larynx. Stomach apparently healthy.

Remark. This patient had been long ill with intermittent. He died suddenly the morning following that on which he was admitted into the hospital: his respiration was hurried and laborious for some hours before his death.

N. B. This dissection was communicated by Mr. Bennett.

No. V. Name unknown. Anasarca. Liver and spleen much enlarged. Bile dark green and viscid, much like tar. Colon considerably contracted. Feces of a light yellow colour. Chest full of water. Pericardium contained about six ounces of water. Other viscera apparently healthy.

N. B. This dissection was communicated by Mr. Bennett.

No. VI. W. R. Robust. Liver perfectly healthy in appearance. Bile of a light yellow colour. Spleen large: in weight

weight three pounds; in structure very little diseased. The small intestines had several portions, about two inches in length contracted, and on their outer surface there were many inflamed spots. The large intestines were contracted also. The whole of the descending colon and rectum were thickened, and in both these bowels scybala were detected. The stomach was flaccid and large, having several red stripes on its inner surface, corresponding with similar stripes distributed over the whole body of a petechial appearance.

N. B. This dissection was communicated by Mr. Bennet.

No. VII. J. B. Robust. Liver healthy. Gall bladder distended and projecting considerably below the edge of the Liver. Bile separated into two kinds of fluids: that part of it towards the fundus was transparent and colourless like serum: that towards the neck, thick, curdled, and of a deep yellow colour. The inner coat of the gall bladder was diseased, having hard black spots upon it, between which were small ulcerations. The ducts were open. The spleen was diseased and enlarged. There were about five ounces of water in the pericardium.

N. B. This dissection was communicated by Mr. Bennet.

No. VIII. W. M. Delicate. Fever with canine appetite until death. Liver healthy. Gall bladder rather distended. Bile viscid, transparent and colourless. Ducts free. Inner coat of gall bladder hardened with spots of a green colour. Every where between these spots small ulcerations were observed. The stomach and intestines healthy. Feces of a light brown colour, and small in quantity. Spleen healthy in appearance.

Remark. This man had been long troubled with rheumatism in the knees, the ligaments of which were thickened and red from the ramifications of fine vessels being distended with blood. There was no increase of synovia. The skin of this man was of a yellowish brown colour. He was considerably emaciated.

N. B. This dissection was communicated by Mr. Bennett.

No. IX. R. C. Ætatis 20. Delicate. Dysentery. Liver very dense, large and livid. Spleen very much enlarged, black, and soft. Its internal substance was almost fluid. Bile thin and of a light yellow colour. The stomach was very much contracted. The small intestines were of a natural colour and contained only a thin yellow mucus. The colon was contracted, thickened, and contained figured feces of a natural colour. The rectum was very much thickened and ulcerated throughout. On its internal coat there were some spots of effusion and many rough, irregular, and inflamed lumps. This intes-

tine

tine did not contain any feces. The mesenteric glands were enlarged.

Remark. This man was a convalescent from intermittent, and attacked only a few days before his death with dysentery. He experienced great pain in the lower part of the abdomen, and had a constant tenesmus, yet he did not evacuate any blood. He voided mucus in abundance.

N. B. This dissection was communicated by Mr. Bennett.

No. X. J. S. Etatis 30. Robust. Ascites. Liver dense and of a dark purple colour. Bile small in quantity and of a light yellow colour. Spleen black and very soft, having several indurated spots on its surface, which upon examination, entered deeply into its substance. These knotty bodies were almost detached from the true substance of the spleen, swimming in a kind of soft gelatinous fluid like pus. The kidneys were very small and flaccid. The bladder thick and contracted. The omentum was perfectly black, and wasted. All the convolutions of the small intestines adhered firmly together were of a very dark colour and covered with several black spots. Feces of a light colour and liquid.

N. B. This dissection was communicated by Mr. Bennet.

No. XI. J. D. Ætatis 24. Intermittent. Ascites. Abdomen distended with water. Liver large, dense, and of a dark purple colour. When divided with the scalpel, no bile trickled from the ducts. In the right lobe, there was a tubercle of the size of a hen's egg. Ducts enlarged and free. Gall bladder distended with viscid bile, of the colour and consistence of treacle, neither possessing a bitter taste, nor imparting yellowness to water when mixed with it. Inner coat of the gall bladder hard, and covered with dark spots. Spleen much enlarged, firm on the outside and soft within, having many spots on its outer surface, and adhering firmly to the surrounding parts. Omentum wasted and of a deep red colour. Stomach relaxed and distended with air. The transverse arch of the colon contracted throughout its whole extent; the sigmoid flexure thickened and full of white feces. The inner surfaces of this bowel and the rectum were covered in several places with tubercles and in some others with small ulcers resembling chancres. The caput coli was as large as the stomach. The small intestines were contracted, and on their outer surface there were many inflamed spots. Pancreas, small and hard. Mesenteric glands much enlarged and mesenteric vessels turgid with blood. The lungs were healthy. The heart large and flaccid, particularly the right auricle and ventricle. The pericardium contained eight ounces of fluid. The brain was soft, and the vessels of the pia mater distended with blood.

Upon

Upon this membrane there was a thick layer of coagulable lymph, of the consistence of jelly.

No. XII. Liver large and of a dark purple colour, having two hard bodies, resembling tubercles, on its right lobe. Gall bladder distended with bile, similar in appearance to tar. Spleen large, and of a jelly-like consistence within. On the small intestines were several lumps of coagulable lymph, and numerous spots of a purple colour. Colon contracted, and full of white feces. Substance of the lungs charged with a frothy fluid, which trickled in great abundance from every part of that viscus, when divided with the scalpel. The lungs had no marks of inflammation. Pericardium distended with fluid. Right auricle of the heart dilated.

No. XIII. Name unknown. Peritoneal covering of the abdominal viscera inflamed. Extensive marks of inflammation under the diaphragm and ribs, adjoining the spleen. This organ adhered extensively to the surrounding parts. It was a mere bag, containing nearly half a pint of purulent fluid. Liver hard and large. Small intestines of a dark purple colour. The coats of the colon were thickened, and the inner surface of the rectum black and covered with ulcers. Mesenteric glands enlarged. Viscera of the thorax natural.

No. XIV. Name unknown. Liver hard and greatly enlarged. When cut into, no fluid resembling bile trickled down it. It was of a perfectly black colour within. The ducts were large and free. Gall bladder was distended with bile, of the colour and consistence of tar; which when mixed with water, imparted to it a dark brown colour. Spleen small and covered with ulcerated spots. The ileum was contracted throughout, and of a deep red colour on its inner surface. The colon was distended, and the caput coli as large as the urinary bladder. Pancreas small and hard. Omentum wasted. Mesenteric glands enlarged. Pleura adhered in several places to the lungs. The pericardium contained ten ounces of serous fluid. The right side of the heart was soft and dilated, the left side hard and contracted. The right auricle was supposed to be one-third larger than usual.

Remark. This man was sent into the hospital apparently in the last stage of intermittent. His abdomen was tense, and very tender when touched. His tongue was hard, black, and dry, skin very hot, and pulse rapid. He breathed with great difficulty, was restless and delirious. He had two severe shiverings while in the hospital. Some hours before his death he became rational, and pyrexia subsided. He repeatedly voided dysenteric stools.

No. XV. P. C. Anasarca. Diarrhœa. Liver natural. Gall

Gall bladder contained half an ounce of a deep brown coloured bile, which, upon being mixed with water, imparted yellowness to it. It possessed a fetid odour, and a bitter taste. Small and large intestines distended with air, and of a very pale colour. Stomach healthy. Mesenteric glands rather enlarged. Spleen slightly enlarged. Lungs filled with an aërated fluid. Pericardium distended with water. Heart small and pale.

Remark. This patient was admitted into the hospital with intermittent, which terminated in dropsy. Repeated hæmorrhagies occurred from the nose, and were at last followed by a cessation of the paroxysm. Such, however, was the debility occasioned by these profuse bleedings, and the diarrhœa, that anasarca supervened and carried the patient off at the end of three weeks after his admission.

No. XVI. Name unknown. Intermittent. Dysentery. Abdomen contained about a pint of deep yellow fluid, of the colour of bile. Peritoneal coverings of the liver, spleen, large and small intestines and stomach were closely speckled all over with small red spots. That part of the membrane which was reflected over the stomach, was uniformly red, while those duplicatures that were extended over the small intestines and the liver, were thickly beset with spots of a bright red colour, so that the whole peritoneum formed a beautiful coating of various shades of red. The covering of the larger curvature of the stomach was of a deep red, approaching to purple, the portion that covered the smaller curvature was of a light red, while that which was extended to the spleen, partook of a tint between the two. The spleen was almost of the natural size, but had numerous little ulcerations and lumps of coagulable lymph on its surface, adhering firmly on all sides to the surrounding parts. The stomach was contracted, but had no mark of disease. The liver was exceedingly large, black, and hard, and the gall bladder was distended with deep green bile. The pancreas was small and hard. On the inner surface of the small intestines, there were ringlets of small lumps, resembling tubercles. The inner surface of the colon was slightly inflamed. The rectum was contracted. The caput coli was very large, and of a pale red colour. The kidneys were large and flaccid. The pleura adhered in several places, to the lungs. The pericardium contained several ounces of water. The heart was flaccid, and its right auricle dilated.

Remark. I am informed that this patient had been discharged from the hospital, a convalescent from intermittent fever, a few weeks before his death; and that a fortnight before this happened,

happened, he was again received a patient, on account of having been attacked with some dysenteric affection. I am not acquainted with the history of his symptoms sufficiently to detail them here. When I saw him, he was constantly crying out with pain in the abdomen, which was distended, and too tender to admit of the slightest pressure. He was exceedingly emaciated, a very young man, and delicate.

No. XVII. A. R. Intermittent. Diarrhœa. Liver black, hard, and large. When a section was made in it, no bile trickled down; but instead of it, a transparent fluid, like water, oozed in great abundance. Gall bladder contained bile resembling tar. Spleen was hard, and weighed three pounds and a half; its inner part was of a gelatinous consistence. It measured twelve inches from its superior to its inferior edge, and eight inches across. Pancreas small and hard. Stomach distended, and red on its inner surface. Small intestines natural. Colon and rectum contracted, tuberculated, and ulcerated on their inner surfaces. Kidneys large, and their infundibula considerably dilated. Cellular substance of the lungs loaded with frothy fluid. When a portion of it was taken in the hand and squeezed, this fluid ran from it, as from a sponge soaked in water. Heart large, and right auricle much dilated. Pericardium contained several ounces of water. On inspecting the brain, its medullary substance was soft, but turgid with blood. All the vessels of the pia mater were enlarged. A layer of coagulable lymph, that had collected in two or three spots, into small lumps of the size of a pea, was spread over the arachnoides. From the back part of the hemispheres, several tea-spoonfuls of fluid trickled down as soon as the dura mater was raised. The vessels of the pia mater, covering the cerebellum, were equally turgid as those of the same membrane enveloping the brain. The usual quantity of fluid was found in the ventricles.

Remark. This patient, who had been gradually sinking with diarrhœa for a fortnight, was seized, two days before he expired, with a severe paroxysm of intermittent, which left him comatose and senseless. To these symptoms succeeded laborious breathing, bilious vomiting, and subsultus tendinum, which soon terminated in death.

No. XVIII. Name unknown. Intermittent. Pneumonia. Omentum raised into little red lumps, and generally contracted. The liver was large and soft. In the gall bladder there was a table-spoonful of black viscid bile. The spleen was large, and admitted of being crumbled into pieces between the finger and thumb. The large intestines were natural. In the ileum, three intus-susceptions were detected.

The whole of this intestine and the jegunum were of a pale colour on their outer surface, and of a deep red one within. The pancreas small and hard. The mesenteric vessels were very turgid with blood. The lungs were condensed, and of a deep red colour, resembling liver. Some portions of the lobes were less discoloured, but even these were firmer and denser than natural. There was no water in the cavities of the chest, but the pericardium contained nine ounces of serous fluid. The right auricle of the heart, and the venæ cavæ were dilated. Both the ventricles contained venous blood.

Remark. This patient was brought into the hospital with the countenance of a strangulated person, suffering greatly from shortness of breathing, cough, pain in the side, tension and tenderness of the abdomen. His body continued cold for some time after he was put to bed, and his pulse was small, contracted, and sometimes scarcely perceptible. After he had been relieved of his pneumonic affection, he was attacked with violent pain, resembling that of colic, in the umbilical region, accompanied with such acute pain and tenderness of the whole abdomen, that he could scarcely allow the bed-clothes to touch him. I was favoured with this short history of the above case by Mr. Bennett, who had the care of the patient. Further particulars I am not able to detail.

No. XIX. A. R. Intermittent. Dysentery. The right lobe of the liver adhered firmly at its surface to the diaphragm, and required considerable force to detach it. When separated, two large bodies of the size a pigeon's egg each, of a yellowish colour and firm consistence, appeared upon it. My attention was first attracted by the magnitude of this lobe of the liver, then its solidity, and lastly the unusual horn-like appearances placed on its upper surface. I examined these eminences and upon pressing them with my finger, found that a sensation of elasticity was communicated to it from them. A section was made in them with a scalpel, from whence there spouted in a full continued stream, twelve ounces of fluid (afterwards measured) as limpid as water, scarcely possessing the least viscidity. The fluid having escaped, the section was enlarged and the cavity underneath held open with the fingers. Upon looking into it I perceived a bag perfectly white in appearance, of considerable thickness and corrugated into folds. It could be lifted out of the cavity with the greatest ease, not adhering, as far as any of those present at the examination could detect, to any part of the excavation in the liver. The bag resembled a short purse, contracted at its upper end, was hard and of a milky whiteness. The sides of the cavity in the liver were very firm, covered with a thick layer of coagulable lymph,

and

and corresponded with the shape of the contained bag, which was nearly oval. The gall-bladder was much distended with bile of a dark tenacious description, in appearance resembling treacle. The left lobe of the liver and the lobulus spigelii were hard but not much enlarged. The spleen was larger than usual, soft and almost gelatinous. The pancreas was contracted and so hard that a section was made in it with difficulty. The omentum was small and totally deprived of adipose substance. The stomach was contracted, and the small intestines were of a dark purple colour. The colon throughout its whole extent, and the rectum, formed but one mass of disease. Their coats retained nothing of their natural appearance, neither could they be separated from one another. A vast deal of coagulable lymph had been deposited between them, and had become condensed, so as to make the intestines twice their natural thickness. They had also become firmer in proportion, and resisted the passage of the knife as much as leather. When taken and pressed between the fingers, they had very much the feel of this substance, and were not unlike it in appearance. Their whole internal surface was completely ulcerated, and when cleared of the feculent matter, were found to be rugged, in consequence of some portions of the inner coat having sloughed, and of others having received an additional lining from condensed coagulated lymph. Before these intestines were washed, pus exuded from numerous small ulcers spread upon their inner surface, and upon examination they were found to be lessened one half in diameter. There was a little yellow serum extravasated in the abdomen. The kidneys were of their natural size and healthy. The urinary bladder and mesentery did not present any morbid appearances. In one of the lobes of the lungs, in the right cavity of the chest, there was a small tubercle of the hardness and colour of cartilage. Externally, the lungs in both cavities of the chest appeared of their natural colour, but upon cutting into them they were dark coloured, and there issued from them many spoonfuls of a frothy, watery kind of fluid. The heart was large and flaccid, but there was no more fluid in the pericardium than usual. I should have mentioned, that upon that duplicature of the pleura spread over the diaphragm, nearest the mediastinum, in the left cavity of the thorax, there were several distinct masses of coagulable lymph of a gelatinous consistence, resembling clusters of hydatids, all adhering very firmly to each other.

Remark. The morbid appearances met with in the liver in this subject, were of old standing, but all the other vestiges of disease were recent, and apparently the consequence of the Walcheren fever.

No. XX. Name unknown. Intermittent. Liver large and hard. The gall-bladder distended with bile of the colour and consistence of tar. The omentum was wasted and black. The stomach was raised and cut open, but only a trifling redness appeared on its inner surface. Upon passing the fingers between the ribs and the spleen, this organ was observed to be strongly connected by numerous adhesions to the peritoneum. The spleen was remarkably large, and when pressed with the hand, yielded as a body that contains fluid. A quantity of pus was found to be effused near its upper edge, just beneath the diaphragm; an effusion, I believe, that would not have appeared but for this organ having been turned out of its natural situation by the dissector. This organ, together with the diaphragm and pleura, to both of which it adhered, were removed from the body, in order to examine more accurately the extent of the disease in these parts. Instead of possessing its usual consistence and size, the spleen was soft and constituted one large abscess, twelve inches long, and nine across its greatest breadth. The abcess had made an opening into the cavity of the thorax, adhering extensively to the diaphragm and pleura. The small intestines were healthy. The colon was contracted, and had numerous small ulcerations on its inner surface. The rectum was slightly ulcerated. The lungs possessed their natural colour, but were condensed, a quantity of white frothy fluid oozing from them when pressed. Upon inspecting the left cavity of the thorax, several ounces of a bloody purulent fluid were found, which at first sight appeared to have formed there, but in reality proceeded from the spleen, which by its pressure, and enlargement from the disease it was attacked with, perforated the diaphragm, near the pericardium. The pleura for some inches around the perforation. bore strong marks of recent inflammation. It was of a deep red colour to the extent of several inches from the perforation, over which blood vessels ran that were extremely turgid with blood. The pericardium contained seven or eight ounces of fluid. The heart was of its natural size but soft: the right auricle and the vena cava dilated. The head of this subject was also examined. As soon as the dura mater was divided, several spoonfuls of serous fluid issued from between it and the arachnoides. All the vessels of the pia mater were very turgid with blood. The cortical substance of the brain was of a deep red colour, and the medullary substance every where interspersed with distended blood vessels. The brain, contrary to what was generally observed at this hospital, was firm. The ventricles contained rather more fluid than natural.

No. XXI. Name unknown. Intermittent. Diarrhœa. Dysentery.

Dysentery. The adipose substance of the omentum resembled jelly of a deep yellow colour. The spleen adhered extensively to the peritoneum, and at the part where it is attached to the diaphragm, had produced an ulceration of the size of a crown piece, upon it. In the upper part of the spleen, there was an abscess containing a large cup full of pus. The lower portion of this viscus was of a deep black colour, interspersed with small brown specks of a firm consistence. The liver was healthy and the ducts free. Bile of a natural colour oozed from this organ when divided with the scalpel. The gall bladder contained about an ounce of deep green bile. This fluid, however, was not so much altered, but it imparted to water a deep golden colour, characteristic of the natural state of the bile. The abdomen contained about a pint of yellow serum. The caput coli was as large as the stomach, distended with very offensive air, and slightly inflamed on its inner surface, which had also a granulated appearance in several spots. The colon was contracted, and lined with small red eminences, or granulations, so closely placed together as to make that portion of the intestine bear a strong resemblance to a turkey's comb. The small intestines were of a pale colour, and contained liquid feces. The pericardium, as usual, had several ounces of serum in it. The heart was flaccid and the lungs natural.

Remark. I was informed by Dr. Monteath, who attended this patient, that he never complained of pain in the side, though so large an abscess was found in the spleen. He had, for two or three weeks, been gradually sinking under diarrhœa, and occasionally voided blood in his stools, but experienced very little uneasiness from tenesmus.

No. XXII. J. C. Intermittent. The liver was enlarged but not in the least indurated; it was of its natural colour, and the gall bladder contained deep brown bile of the usual consistence. The spleen was very large and hard. The stomach was flaccid and relaxed. As the subject had been much emaciated by his disease, all the adipose substance of the omentum and mesentery was nearly absorbed. The first membrane exhibited a delicate net work spread out on the large intestines, while the mesentery presented the appearance of a thin web thickly striped with turgid blood vessels, whose ramifications could be traced round the intestines. Upon passing the convolutions of the small intestines between the finger and the thumb, a lump was perceived about the middle of the ileum, which when closely examined, proved to be an intus-susception of the intestine six inches in length. The containing and contained part of the bowel was inflamed on its outer and inner surface.

There

There were no feces above the intus-susception, but a great deal below it. The colon and rectum were natural. The lungs were condensed, the right lobes adhering firmly to the pleura. The heart was heavier and larger than usual, and the right auricle dilated.

Remark. This patient was admitted into the hospital with constant pyrexia upon him, and had indistinct paroxysms of ague at uncertain periods, till his death. The interval was always confused, one paroxysm sometimes scarcely going off, before another came on. He was constantly delirious, his pulse rapid, tongue hard and dry, abdomen tense, but bowels natural. Gradually these symptoms abated, but the paroxysms returned. The evening before he expired, he was seized immediately after a severe paroxysm, with acute pain in the umbilical region, and bilious vomiting. His hands were constantly fixed upon his abdomen, and his knees contracted. In a few hours from this attack, his breathing grew laborious, his extremities became cold, a clammy moisture was diffused over the skin, his pulse became tremulous, and singultus succeeded, in which state he expired.

No. XXIII. J. G. Intermittent. Dysentery. Hydrothorax. A few hours after this man's death, a frothy fluid was observed to ooze freely from between his lips, which became the following day so considerable in quantity, as to trickle down the chin and breast. Upon opening the trachæa with the scalpel, nearly a small tea cup full of this fluid escaped from the aperture. The ramifications of the bronchiæ, as well as the cellular texture of the lungs were completely filled with it: several portions of the lungs were cut off from which this fluid dropped, as from a sponge that is filled with water and held up between the finger and thumb. Upon examining the portions of the lungs after the fluid was squeezed out of them, they appeared denser and darker coloured than usual. The lungs in each cavity of the thorax, swam in a pint and a half of reddish coloured serum. There were some adhesions to the pleura on the posterior part of the right thoracic cavity. The pericardium contained eleven ounces of serum, and had numerous red spots on its inner surface. The heart was exceedingly heavy and much enlarged. A thick layer of coagulable lymph covered its outer surface, and attached it in one or two parts to the pericardium. This organ was extremely firm when divided by the scalpel, still the right auricle, and the two venæ cavæ were dilated; but upon the whole, the right side of the heart was thicker and firmer than I ever met with before in the course of my dissections at Ipswich.

The abdominal viscera presented many morbid appearances. The liver was hard and enlarged, but not so dark as usual in the Wal-

Walcheren fever. The gall bladder contained only half an ounce of bile like tar. Its inner surface was slightly ulcerated. The spleen was very large and soft, bearing a strong analogy to coagulated blood confined in a bladder. When a section was made into it, its substance escaped without the least cohesion. The stomach was contracted. The small intestines were of a dark purple colour. The colon was lessened in its diameter, and on its inner surface bore marks of recent ulceration. The rectum had been ulcerated but was healed. The whole of the intestinal canal, and all the viscera of the abdomen were enveloped in serum, the small and large intestines being connected together by hardened layers of coagulable lymph. On various parts of the peritoneal covering of the viscera, there were vestiges of inflammation. The head of this subject was opened, but no other morbid appearance was noticed than an unusual softness of the brain.

This man was committed to my care on October 20th, having intermittent of a double tertian type which was marked with various irregularities, and anomalies similar to those I have described in the preceding pages. In the course of its progress, the fever became sometimes continued, then remitted, but more commonly intermitted so as to make two paroxysms and two intervals perceptible in the forty-eight hours. The man had been ill several weeks, and had become anasarcous, and was oppressed with visceral disease. To the dropsical disorder succeeded diarrhœa, dysentery, and symptoms indicatory of effusion in the thorax. The abdomen was tumid and tender, and a particular inflation prevailed about the epigastric region. When I first saw the patient, I considered the primary indication was to check the diarrhœa, under which he appeared to be fast sinking. For this purpose I prescribed in turn catechu, carbonate of lime, hæmatoxylum, and opiate confection, all which, far from controlling the diarrhœa, rather increased it, and occasioned griping pains. The probability of this affection being precursory to dysentery now struck me, and induced me to pursue an opposite treatment, which, prima facie, scarcely appeared justifiable. For this purpose, I directed a scruple of the sulphate of magnesia to be taken every four hours, interposing between the doses half a scruple of opiate confection in order to allay the severe griping with which the patient was harassed. Fomentations were applied to the abdomen, and glysters with starch now and then thrown up. In the course of three days a considerable amendment occurred in the bowel complaint. Scybala intermixed with blood and mucus had been passed every two or three hours; but the abdo-

men

men was now softer, though still very tender: and the griping and tenesmal affection were much diminished. In proportion, however, as the patient recovered from this complaint, anasarca increased, and hydrothorax evidently became stronger marked. He started in his sleep, was short-breathed and delirious, he had constant pyrexia, and was attacked with one paroxysm daily at uncertain hours. His pulse was 130. He had palpitations of the heart, and complained of great uneasiness at the præcordial region. Blisters to the chest, drastic purges with elaterium and gamboge, the digitalis and squills were successively had recourse to with temporary benefit. I also employed mercurial frictions. This treatment was followed by an absorption of the effused fluid; the breathing again became free, the pulse regular, and pyrexia subsided, but it was impossible to ward off a recurrence of the paroxysms, which, at each time of their return, terminated in fresh effusions. The anasarcous appearance of the body became much abated, but hydrothorax augmented. A few days before the patient's death, the dysenteric affection returned. A more complicated case I do not remember to have met with. Here is intermittent, producing anasarca, diarrhœa, dysentery, and hydrothorax. It was to the latter complication of the fever that the patient fell a victim.

No. XXIV. W. D. Intermittent. Dysentery. Liver of a dark purple colour, but of the natural size. Gall bladder almost empty and slightly ulcerated on its inner surface. Omentum black, but almost wasted. Peritoneal covering of the viscera very red. Spleen small, hard, and covered with ulcers. Rectum and colon completely gangrenous, of a dark colour on their inner and outer surfaces and extremely offensive. They had sloughed, and were so gangrenous as to tear to pieces with the greatest ease. The caput coli was excessively distended with air. The inner surfaces of the small intestines were inflamed, several rows of small red eminences appearing upon them. The small and large intestines were distended with feces. The mesenteric glands were enlarged, and the mesenteric vessels turgid with blood. The lungs appeared natural. The pericardium contained several ounces of serum. The heart was flaccid, and the right auricle dilated. Between the dura mater and the arachnoides there was a thick layer of coagulable lymph. The brain was soft, and in the ventricles there was an unusual quantity of fluid.

Remark. This patient had been attacked with paroxysms of the Walcheren intermittent, which came on at uncertain hours, were sometimes violent, at others mild, never terminating in a perfect crisis. During several successive returns of the paroxysm, he had repeated pains in the abdominal viscera, and was at last seized with

with diarrhœa, which alternated with the aguish paroxysm, creasing when it came on, and returning after its termination. Gradually the diarrhœa became permanent, constant pyrexia prevailed, the abdomen grew tense and tender, and the legs œdematous. For a fortnight before his death, the paroxysms of intermittent disappeared. In their place, the patient had severe exacerbations of hectic every evening, he complained of headach, pains in the back, became drowsy and despondent, had a black tongue, and grew delirious. The emaciation of his body daily became more evident, he voided dysenteric stools involuntarily, declined taking any food, and ultimately sunk under the accumulated sufferings of a dysenteric patient.

No. XXV. Copy of a case and dissection inserted in the Medical Register.

J. P. Has had intermittent return at irregular periods for nearly two months. To the last accession, which occurred a few days before he was admitted into the hospital, succeeded a continual heat of skin, considerable pain in the head, excessive prostration of strength, and coma. I cannot ascertain, from the imperfect account which he is able to give me of his case, the particular history of his indisposition, or even of the varieties which have marked its progress to the present time.

His skin is now very hot, his pulse 130, his countenance occasionally flushed, but more commonly pale and dejected. His tongue is hard and brown, and his teeth and lips are covered with sordes. He sleeps profoundly for two or three hours together, then his lethargy goes off, and delirium supplies its place. His breathing is rather short, but it does not appear to be performed with difficulty. His bowels are regular but the feces are very black and fetid, There is remarkable tension over the whole abdomen. The right hypochondrium is particularly tender, and when the left side is pressed, pain is excited in the region of the spleen; much hardness prevails in both the left and right hypochondrium. The patient has twice thrown up a green viscid fluid, yet his stomach is by no means irritable. He makes water freely. As soon as he rouses from the state of lethargy into which he is so frequently plunged, he manifests great bodily perturbation and anxiety. He seldom coughs, but frequently attempts to drink. His first complaint was intermittent, and its consequence, apparently, the disease under which he now labours.

Nov. 11th, Abluatur totum corpus, nunc et iterum vespere, aqua frigida, si valde urgeat calor febrilis.

Abradatur Capillitium et admoveatur postea Episp. Capiti.

R. Pulv. Jalapæ gr. xx.

Calomel—gr. iv. ft. Pulv. stat.

12th Medicine had operated freely. Skin still very hot. Pulse 130. Is rather delirious than comatose. Since yesterday a

 yellowness

yellowness has been diffused over the whole body. Arms and legs moved at times in a convulsive manner. Tongue foul. Breathing short.

Habeat quamprimum Pulv; Ipecac. gr. xv.

Iterum abluatur corpus aqua frigida.

Habeat Vin. Rubr. ℥viij.

In the evening much the same. Emetic has not operated on the stomach. He has passed many offensive stools intermixed with a green and blackish fluid.

Habeat Calomel gr. i. nunc et iterum mane.

Abdomen nunc et mane inungatur Linim. Volat.

13th, Delirium alternating with coma. Abdomen tense and tender. Skin of a deep yellow tint. Pulse 130. Tongue extremely foul, but moist. Breathing short. Had two stools in the night. Habeat Antim. Tart. gr. iſs. stat.

In the evening had rejected a great deal of green and yellow fluid from the stomach. Pulse 130. Skin very hot. Delirium rather abated.

Habeat Vin; Rub; ad ℥xij. Repr. Ablutio frigida Sumat Calomel. gr. i. hac nocte.

℞. Mist. Camp. ℥viſs, Tinct. Opii. guttas xxx.

Ammon. ppt. ʒſs. M. Sumat. cochlearia qua tuor ampla 3tiis. horis.

14th. Delirium almost abated. Is not comatose. Pulse 105. Skin extremely hot. Tongue moist, but covered with brown sordes. Abdomen tense and very tender.

In the evening, Medicine has operated freely. Skin not so hot. Tongue foul and dry. Is very sensible. Repr.

15th, Skin dry, but not much parched. No delirium. No coma. Skin of a deep yellow colour. Bowels open. Much sordes about the teeth and tongue. Repr. Pulv. Aperiens.

In the evening, much worse. Skin cold. Pulse indistinct. Breathing laborious. Has had several stools of a black and offensive nature. Expired in the night.

Omentum natural and beautifully spread out upon the large and small intestines. Transverse arch of the colon distended with air and inflamed on its inner surface. Jejunum healthy, but the ileum throughout its whole extent, and particularly near the jejunum of a deep red colour. This intestine was not merely red on its inner surface, but of the same colour on its peritoneal covering; spleen large and adhering firmly to the diaphragm. From its superior to its inferior edge it measured eleven inches, and a cord passed transversely round this organ measured thirteen inches in length. The under surface of the diaphragm nearest to the adhesions bore marks of high inflammation. Pancreas hard and small. Liver nearly of the natural size, and apparently not altered in structure.

ture. When the liver was divided with the scalpel, bile trickled from numerous points. This fluid was thick and yellow. the gall bladder contained two ounces of this kind of bile.

The cavity of the abdomen scarcely had the usual quantity of fluid to give lubricity to the viscera.

The lungs had their usual appearance; the pericardium contained eight ounces of serous fluid.

No. XXVI. Name unknown. Intermittent. The liver was large and of a dark purple colour, but on cutting into it, a yellowish fluid oozed freely from innumerable points. Several tea-spoonfuls were collected from detached pieces of the liver. The fluid was slightly bitter, and imparted a yellow colour to water. The gall bladder was distended with very fetid bile of a deep brown colour. The spleen contained a small abscess at its upper extremity, but was not much enlarged. The small intestines were very pale; the colon and rectum slightly inflamed on their inner surface. Their coats also were thicker than natural. The lungs were of their natural colour, but their cellular texture, and the ramifications of the bronchiæ were so completely distended with a frothy kind of fluid, that it oozed from the mouth, and flowed out by tea-spoonfuls when the trachæa was divided. The lungs resembled a large sponge, distended with water. The pericardium contained ten ounces of serum. The left side of the heart firm, the right side soft; both ventricles contained black blood.

Remark. This patient for several weeks had been attacked with a paroxysm of intermittent every day. For three or four days only before his death, did the fits cease. To the last paroxysm succeeded constant pyrexia, shortness of breathing, a quick irregular pulse, which afterwards became intermitting, œdema of the legs and face, first redness and then blueness of the cheeks, and slight delirium. Gradually the respiration became laborious and intercepted, the lips and countenance livid, the pulse tremulous, and the body cold. On the fourth day, from the invasion of constant pyrexia and symptoms announcing effusion in the bronchiæ, the patient expired.

I have several times been an eye-witness to a sudden effusion of water in the bronchiæ or thorax upon the cessation of the paroxysms of intermittent. I believe this termination of the disease was far more frequent than effusion into the abdomen and cellular membrane. It was impossible to guard against it, for it would sometimes take place in the course of a few hours without any previous warning.

No. XXVII. Name unknown. Intermittent. Pneumonia which terminated in hydrothorax. Peritoneal covering of the viscera inflamed. The liver was of a dark colour, and the bile resembled tar.

tar. The spleen was very large, but of a soft consistence. The stomach was small, and the large intestines were distended with flatus.

In each cavity of the chest, there was about a pint and a half of bloody serum. The lobes of the lungs on both sides were very much condensed, and of a deep red colour. Those of the left side were covered with coagulable lymph of a membranous consistence, which united them firmly to the pleura, and had apparently become an organic part. The right lobe adhered strongly to the posterior part of the pleura, but only filled a small portion of this cavity of the chest. The lungs very much resembled the liver, and when they were cut into, gave out blood freely, intermixed with serum. From one of the lobes, not less than half a pint of blood and serum was squeezed out with the hand. In no instance did I remember to see so much blood issue from the lungs when divided with the scalpel. Every vessel seemed to be loaded with black blood, and all the ramifications of the bronchiæ as well as the cellular texture of the lungs to be filled with serum.

In the pericardium there were several ounces of serum. The heart was covered with coagulable lymph, and the right auricle dilated. The right and left ventricles were both filled with venous blood.

Remark. This patient was brought into the hospital with shortness of breathing, a dejected and livid countenance. He was just able to say that he had been ill with intermittent for a month, and that he had been seized only a few days before his admission here with severe pain in the chest and abdomen, cough, and headach. His pulse was almost imperceptible, and his body covered with spots of a purple colour. He experienced some relief from venesection, but did not live many hours after.

No. XXVIII. Intermittent. Diarrhœa. From the cavity of the abdomen there issued about two pints of serum. The liver was large and dark coloured. The gall bladder was half full of bile like tar, and slightly ulcerated on its inner surface, which was interspersed with small tubercles, almost similar to those so frequently met with in the colon and rectum. The spleen was large and ulcerated in several places on its outside. The stomach was very much relaxed and pale. The small intestines were of a dark purple colour, slightly inflamed on their inner surface and tuberculated in several places. The colon was contracted, and had red stripes around it like rings, upon which were numerous red eminences of the size of a pin's head, placed in rows. The rectum was healthy. The pancreas was hard and small. The

mesenteric

mesenteric vessels were very turgid. The lungs were natural. The pericardium adhered closely to the heart, but this did not appear to be the effect of recent disease. There were two or three spaces between this bag and the heart, large enough to admit the end of the scalpel. They contained a gelatinous substance, perfectly transparent, which admitted of being removed with the greatest ease. The heart was natural, but the right auricle as usual was dilated.

The meninges of the brain bore no marks of disease, but the brain itself was of a very soft consistence, and the ventricles were filled with serum.

Remark. This patient had been attacked with double tertian paroxysms for three or four weeks before the disease of the chest came on, the approach of which was gradual, and attended with those symptoms which indicated its true nature. At first, hydrothorax gave way to medicine, but it recurred after a severe paroxysm, and increased with such rapidity as to put an end to the patient's life in a few hours.

No. XXIX. Name unknown. Intermittent. Dysentery. The morbid appearances of this body were entirely confined to the abdominal viscera. On opening the abdomen, which was inflated, a small quantity of yellowish serum of a very fetid odour flowed from it. The omentum was almost black and much wasted. The peritoneal covering of the viscera was red. The liver was large, black and soft. The gall bladder contained only a spoonful of bile like tar, and two small calculi. The spleen was soft, but of an enormous size. The colon was ulcerated throughout its whole extent, and the plicæ filled with scybala, blended with a purulent fluid. Towards the sigmoid flexure there was a circular contraction that almost closed the bowel. The rectum was much ulcerated, and had sloughed near its termination. The jegunum and ileum were interspersed with black spots on their inner surface, the intervening spaces were red, and raised up into little protuberances, resembling granulations of flesh, indeed the appearance of the whole was not unlike a cock's comb. Blood issued freely from these projections when pressed. The mesenteric glands were enlarged, and the vessels of the mesentery turgid with blood. The stomach was slightly inflamed on its inner surface.

Remark. After this patient had been attacked with double tertian paroxysms of irregular type for a month, he became subject to a bowel complaint. At first, the complaint was diarrhœa, which gradually changed into dysentery. Then the abdomen grew tense and tender, the right hypochondrium hard, his appetite failed, and emaciation rapidly increased. A few days before he expired, he had a respite from the paroxysms of

of ague, but instead of them, a severe exacerbation of hectic came on every evening, preceded by a chilliness that lasted for an hour or two, and that was almost as distressing as the cold stage of the paroxysm of intermittent. His countenance was expressive of pain and despair, he was too weak to sustain himself upright in bed, and at last he rejected every thing from his stomach, and was a constant prey to a severe tenesmal pain, that pervaded every part of the intestinal canal.

No. XXX. M.S. Intermittent. The omentum was of a green colour, but almost wasted. The liver was large and soft. The gall bladder contained an ounce of bile that had separated into a curdled mass, composed of green lumps, and a substance like serum. The inner surface of this bag was slightly ulcerated. The spleen was converted in the middle of its substance into a purulent fluid, and was interspersed on its outside with small yellow bodies like glands. The large and small intestines were natural. The pericardium was distended with serum. The heart was flaccid, the right auricle and the two venæ cavæ dilated.

The following is the copy of a communication which I received from Dr. Monteath, surgeon of the Northumberland regiment, who opened the bodies of two men who died under my care. I am anxious to have them inserted here, as one of the dissections contains an account of an extraordinary appearance, situated around the epiglottis. I shall content myself here with giving the dissection in the doctor's own words.

Body opened on Friday.

No. XXXI. J. M. The trachea, larynx, œsophagus and pharynx, were cut out along with the tonsils. On looking down the pharynx, a substance resembling a vesicle or hydatid was observed in the seat of the epiglottis. The pharynx and œsophagus having been slit open, this appearance was found to be caused by a dropsical state of the living membrane of the epiglottis. The same state existed around the rima and sacculi laryngis to such a degree that the rima could not be seen but by pushing aside the dropsical swelling. The swelling was even of a considerable size on opening the body, but from the shrivelled and loose state of the membrane, and its being perceptible externally previous to death, I have no doubt but at that time it must have equalled a turkey's egg in size.*

* I think it probable that this preparation is in the possession of Mr. Astley Cooper. After having procured a drawing of it, I permitted Dr. Monteath to reserve it to himself, who told me he had it in contemplation to present it to Mr. Cooper.

In

In the body examined on Saturday, I found the substance of the lungs very much loaded with water. The pericardium contained three times the natural quantity of fluid, and there was nearly a pint of fluid in each side of the thorax. Trachea natural.

No. XXXII. M.N. Intermittent, Dysentery. The liver was considerably enlarged, hard, and of a dark purple colour. The ramifications of the vena portarum were all distended with blood. No bile trickled from the liver upon dividing it with the scalpel, but a thin frothy fluid oozed from it in abundance. The gall bladder was distended with deep green bile of a very viscid consistence, similar to what the patient rejected from his stomach and passed by stool. The spleen was very large and weighed four pounds. It was lobular on the edge next the ribs, and of a soft consistence throughout its whole substance. The stomach was flaccid, slightly red on its inner surface, and contained several spoonfuls of viscid green bile. The small intestines were of a deep purple colour, and interspersed on their inner sides with tubercles and small ulcers resembling chancres. The colon and rectum were both contracted in some parts, and dilated in others. They had numerous tubercles and ulcerations. The villous coat of the rectum had sloughed extensively, and was so much altered every where as to be scraped away with the slightest effort. In the cavity of the abdomen there was about a pint of serum. The peritoneal lining of the viscera was inflamed in several spots, and the mesenteric glands were enlarged.

The lungs were condensed, and had extensive ecchymosis upon their surface. In the pericardium there were several ounces of serum. The heart was much elongated, soft on the right side and hard on the left. A little coagulable lymph slightly inspissated, covered the heart. The brain was very soft, the hemispheres united by coagulable lymph, and the ventricles very full of water.

No. XXXIII. J. H. Intermittent. Hydrothorax. Anasarca. The liver was of a dark purple colour, and the gall bladder distended with bile similar in appearance to tar. An aqueous fluid trickled freely from every part of the liver when it was divided with the scalpel. In the right lobe there were two large tubercles, and a slight ulceration around them. The spleen was very large and pressed against the diaphragm with considerable force. On passing the hand between the spleen and the ribs there issued from the upper edge of that organ a large quantity of purulent fluid, which proceeded from an abscess in it seated between the vasa brevia and the diaphragm. The inferior edge of the spleen was slightly ulcerated, and the remainder

remainder of its substance, which had not degenerated into pus, was soft and of a nature similar to coagulated blood. The peritoneal covering of the stomach was red, especially that part of it which was nearest the spleen. The stomach itself was pale and relaxed. The colon was contracted in some places and dilated like a bag in others: but it was neither red nor ulcerated within. The rectum was healthy: the small intestines were of a dark purple colour, and very red within. In each cavity of the thorax there was at least a pint of serous fluid. The lungs adhered to the posterior duplicature of the pleura, and were condensed; yet when divided, there issued from them several spoonfuls of a thin frothy fluid. In the pericardium there were ten ounces of water. The heart was much enlarged and pale. The right and left ventricles equally contained venous blood.

The brain was, as usual, very soft. There was no diseased appearance, however, on the meninges, neither had the ventricles more serum than is commonly met with.

No. XXXIV. T. B. Intermittent. Anasarca. Diarrhœa. All the cavities contained a great deal of water. The liver was large and black, and the gall bladder was distended with bile similar in appearance to tar. The spleen weighed four pounds, was firm and dark coloured throughout its whole substance. It adhered extensively to the surrounding parts. The convolutions of the small intestines were united together by condensed coagulable lymph. They were of a reddish colour, and interspersed with small red eminences on their inner surface. The coats of the colon were thickened. The stomach adhered to the transverse arch of this intestine. The mesenteric vessels were very turgid with blood. The lungs were completely anasarcous. There issued from them at least a pint of thin frothy fluid. The bronchial glands were also enlarged. The pericardium contained thirteen ounces of serum. The heart was large and flaccid. The two venæ cavæ were distended with blood, and the right and left ventricles both contained venous blood. The brain was soft, and the ventricles full of serum. Blood flowed copiously upon dividing the sinuses with the scalpel. A vast deal of debility seemed to have pervaded all the viscera. They were in general paler than natural.

No. XXXV. T. M. Intermittent. The abdomen was unusually distended a few hours after death, which upon being divided, appeared to be occasioned by gas of a very fetid kind. There issued also from this cavity a yellowish inodorous fluid, but the quantity was inconsiderable. The liver was, as usual, black, much enlarged, and particularly soft within. It had almost

most acquired the same softness that the spleen generally does in this fever. The inferior edge of the right lobe was slightly ulcerated. The spleen was very large. Upon passing the fingers behind this organ, pus issued freely from the upper part, from a small abscess that was seated therein. The colon was variously contracted and dilated, so as to resemble a curtain drawn up in festoons across the epigastric region. It was ulcerated within, to the extent of three or four inches. The small intestines, and the rectum were natural. On opening the chest there issued from it a few ounces of thin, yellowish serum. The lungs were anasarcous, and almost filled the cavities of the chest. In the pericardium there were ten ounces of water. The heart was large, and both ventricles were filled with venous blood. The venæ cavæ and the right auricle were considerably dilated. I should have mentioned that the omentum was deprived of its adipose substance and almost black, and that one of the mesenteric glands had become suppurated. The venous system of the abdomen, was, as usual, much distended. The brain was particularly soft, and the vessels of the pia mater turgid. There also issued from between the meninges several tea spoonfuls of yellowish serum.

No. XXXVI. J. P. Intermittent. Shortly after this patient's death, a frothy fluid was observed to flow freely from the mouth, and his abdomen to become much distended. Upon opening the abdominal cavity, a fetid gas, and a thin yellowish inodorous fluid escaped. The liver was extremely large, but soft and black. No bile was observed to trickle down when this organ was divided with the scalpel. The gall bladder contained an ounce of bile similar in colour and consistence to treacle. The inside of this bag was ulcerated, and the ductus cysticus excoriated through its whole length. The spleen was small, but ulcerated in several places on its outside, and within it was closely interspersed with little yellow bodies resembling glands. The stomach was contracted in the middle, but contained a great deal of fluid like coffee-grounds. The small intestines were exceedingly distended, and of a light blue colour. They had no vestige of disease on their inner surface. The coats of the colon and rectum were thickened, and these intestines were irregularly contracted and dilated. The mesenteric vessels were very turgid, even in their minutest branches which surround the intestines. The mesocolon was of a deep red hue, and the omentum partook of a similar colour. On opening the chest a large quantity of serum was discovered, in which the lungs completely swam. The right lobe of the lungs was strongly attached to the pleura, the left was free as usual. From the neck even to the diaphragm, the right side of the chest

was filled with a reddish coloured fluid. In the middle of the lobe there was a tumour elevated above the surface of the lungs, of a deep red colour and firm to the touch. From the lower part of its circumference, which was extensive, proceeded the adhesions which attached the lungs so firmly to the mediastinum and to the ribs; hence a great difficulty arose to the free performance of respiration, and to the action of the lungs, which were so fixed as not to yield to the dilatation and contraction which this organ is accustomed to undergo. The substance to which I allude in the lungs, could not be separated, and appeared to be composed of an assemblage of several tubercles lined with a thick membrane and filled with a yellowish firm substance, which, nevertheless, gave way to pressure and became half dissolved. The lungs on each side of the tumour were condensed and red, and the bronchiæ were full of serum of a turbid and reddish aspect. The lungs of the left side of the thorax were condensed, and red in places only. The pericardium contained several ounces of serum. The heart was large and firm, and both its ventricles were filled with venous blood. On opening the larynx, several spoonfuls of the same kind of fluid which oozed from the mouth, escaped from the aperture made by the knife.

In the head there were some marks of disease. Between the pia and dura mater I found several tea spoonfuls of coagulable lymph, and on the posterior part of the hemispheres there was a layer of it of gelatinous consistence. The brain was soft and the ventricles were filled with serum. This body was inspected a few hours after death, and yet the brain was so soft as not to bear the passage of the knife.

No. XXXVII. F. C. Intermittent. Dysentery. Omentum almost wasted away, its remaining portions being of a black, or deep green colour. The liver was of a deep purple hue, and soft, but not large. The gall bladder was distended with bile, resembling tar. The spleen was of the natural consistence, a little enlarged, and slightly ulcerated at its inferior edge. The colon did not exceed the ileum in capacity, but was lined with ulcers and tubercles, of the kind I have elsewhere described, from the caput coli to the termination of its sigmoid flexure. The rectum was ulcerated, and covered with blood, which tenaciously adhered to the villous coat. This intestine had apparently sloughed at its lower end. The ileum and jegunum were of a purple colour, and so soft as to tear with ease between the fingers. The peritoneal lining of the intestines and stomach appeared to be red in places. The mesenteric glands were much enlarged. The thoracic viscera were beautiful. The pericardium contained more fluid than natural,

tural, but the heart was neither flaccid, nor its right auricle much dilated.

No. XXXVIII. W. C. Intermittent. Hydrothorax. The liver was of a deep red colour, and not much enlarged. The bile was more natural in its appearance than in any other subject: it was moreover bitter, and imparted a deep yellow colour to water. The spleen was enlarged and soft. The stomach was contracted in the middle, and the large curvature drawn down. The peritoneal covering of all the viscera was red. The omentum was but little wasted, and of its natural colour. The intestines were all inflated, but there were no morbid appearances within them. The mesenteric vessels were much distended with blood.

On examining the chest of this subject, who expired unexpectedly, a great quantity of serous fluid was found. Each cavity contained at least a pint and a half. The lungs did not adhere to the pleura, but swam in the effused fluid. The bronchiæ, however, were filled with serum, and the substance of the lungs was interspersed with red spots. Between the dura mater and the arachnoides, there were several large spoonfuls of water. All the vessels of the pia mater were turgid. The brain was extremely soft, and the ventricles distended with water. The sinuses were all loaded with blood, and the hemispheres united by coagulable lymph.

No. XXXIX. J. P. Intermittent. Constant delirium. On dividing the parietes of the abdomen, which were much inflated, there issued about a quart of yellowish serum, of a very fetid odour. The omentum was blackish, and the peritoneal covering of the viscera red. The liver was of a dark purple colour, soft and large. The gall bladder contained a large spoonful of bile, like tar, and was ulcerated on its inner surface. The spleen was large, and its substance degenerated in places, into a dark purulent kind of fluid. The small intestines were rather pale. The colon was slightly contracted, and the rectum ulcerated. The mesenteric vessels were turgid with blood, and the glands of the mesentery swoln. The stomach was distended with gas, and contained several ounces of a dark coloured fluid.

In this case the lungs were free from any vestige of disease. In the pericardium there were several ounces of fluid. The heart was flaccid, and the right auricle, together with the venæ cavæ dilated as usual.

The vessels of the pia mater were very turgid. On the posterior part of the hemispheres of the brain, there was a thin layer of coagulable lymph inspissated. The brain was soft,

soft, but the ventricles contained only the natural quantity of serum.

No. XL. R. C. Intermittent. Pneumonia. On opening the abdomen, there issued from this cavity about a pint of yellow serum. The omentum was almost wasted, but preserved its natural colour. The liver was large, black, and soft, and adhered firmly to the ribs. The ramifications of the vena portarum were very turgid with blood. The spleen was large and hard, but ulcerated at its under edge. The stomach was natural. The small intestines were red on their inner surface, but of a purple hue externally. The colon was rather contracted, but the rectum had no mark of disease. The caput coli was much distended with air, and was as large as the stomach.

On opening the thorax, the left lobe of the lungs was found to swim in about a pint of reddish serum, and was firmly pinned to the diaphragm and pericardium, so as to be raised up with much difficulty. They were dense, and of a deep red colour, giving out little fluid when cut into. The right lobe of the lungs adhered in the firmest manner from the diaphragm to the neck, and required great force to detach it from its union to the ribs in particular. The hand, indeed, was unable to separate the lungs from the diaphragm, or the ribs, without lacerating them. The substance which connected them was of a deep red colour, of the thickness of membrane, was interspersed with vessels, and in every respect had the appearance of an organic part. It was entirely spread over the posterior and lateral sides of the lungs in the right cavity of the thorax, but the left lobe had very little upon it. The right lobe was condensed, and turgid with blood, which started from a thousand orifices, when the lungs were divided with the scalpel. In some parts it had the appearance of marble externally, in others it was of a deep red hue, and resembled liver. In the pericardium there were ten ounces of serum. The heart was flaccid, and the right auricle, as usual, dilated. Both ventricles contained venous blood.

Remark. In order to shew the insidious approach of this inflammatory affection of the lungs, I think it important to record, that when the patient came into the hospital, only four days before his death, he was able to walk about, breathed free, slept well, and merely complained of having a dry cough in the interval of the fever. He had no pyrexia, his bowels were regular, and his pulse feeble and soft. The following day after his admission, his cough increased rapidly, it had a hollow sound, he breathed short, and did not expectorate. His breathing gradually became sonorous and short, his nostrils

trils expanded, his countenance pale and ghastly. At last he breathed like a person who had been running hard, his lips and face grew black, a frothy fluid now and then escaped from his mouth, and his extremities became cold. He complained of little or no pain all this time in the chest. Just before he died, his breathing could be heard in the next ward, he lay with his body bent forward, and his chest completely fixed. At this time he was delirious, his pulse sunk and irregular, his legs were covered with blue spots, and his feet and ancles were œdematous. The coldness of the body encreased, and he expired in a state of suffocation.

No. XLI. D. D. Intermittent. Gangrene of the sacrum. The liver was of its natural colour, and but little enlarged. The gall bladder contained an ounce of deep brown bile. The omentum was entirely wasted. The spleen was interspersed with yellow bodies, resembling glandular masses, but it was not much larger than usual. The stomach was relaxed, and contained a little green bile. All the intestines were inflated. The colon was red on its inner surface, and scabrous on the reddest parts. The rectum was red, and its coats much thickened. The mesenteric glands were considerably enlarged, but the vessels of the mesentery were by no means turgid. The pancreas was hard and small. Great debility appeared to prevail in the pale and relaxed appearance of all the viscera. The lungs were healthy. The pericardium had only the natural quantity of serum. The heart was flaccid, and the right auricle dilated.

No. XLII. W. W. Intermittent. Constant pyrexia. Soon after death, the abdomen became prodigiously inflated. On opening its parietes, a fetid gas, and about a pint of yellowish serum, escaped. The peritoneal covering of the viscera was generally inflamed. The omentum was red, granulated in some parts, and of a gangrenous nature in others. The liver was darker than natural, but this was the only change which it appeared to have sustained. The gall bladder contained a table-spoonful of dark bile, similar to tar. The spleen was very large: it weighed four pounds, and was beginning to suppurate in the interior of its substance. The small intestines were of a dark purple hue. The large intestines were distended with flatus, and the colon was slightly ulcerated on its inner surface. The pancreas was small and hard. On passing the fingers between the convolutions of the small intestines, they met with numerous obstacles from the coagulable lymph that was exhaled, and that had formed bands, uniting one convolution to another. The mesenteric vessels were found to be turgid with blood. The lungs on both sides

of

of the chest were variously interspersed with red and purple marks. Numerous small specks, shewing that ecchymosis had begun, were every where distributed on their surface. When divided with the scalpel, blood oozed abundantly from the ramifications of the pulmonary veins, but it was perfectly black, and had formed partial congestions in two or three places. The right lobe adhered behind to the pleura. The pericardium contained three times its natural quantity of serum. The heart was elongated, firm on the left side, and soft on the right. The right auricle, and the two venæ cavæ were dilated nearly one-third of their diameter. On the arachnoides there was a layer of of dense coagulable lymph, which covered the upper part of both the hemispheres of the brain. The vessels of the pia mater were extremely distended. The brain was very soft, and the ventricles full of serum.

GENERAL DISSECTIONS.

I shall now trace, and exhibit at one view, the morbid appearances entailed by the fever of Walcheren on the body, as they were observed to present themselves upon dissection. After the particular dissections which have been given, I assign to myself the task of detailing the morbid anatomy of each part, in the best way that I am able, from the general and cursory mode of inspecting subjects, practised in military hospitals. Such a mass of anatomical facts, arranged in regular order, will support, corroborate, and illustrate the dissections of other persons, and shew at one view the ravages committed by the Walcheren fever, whether they coincide with those that have heretofore occurred in remitting and intermitting fevers, or in what particulars the disease under consideration has differed in appearances after death, from those produced by fever at any former period.

In no part of the body, were the consequences of the Walcheren fever more severely felt by the patient, or noticed in him after death, than in the viscera of the abdomen. Every morbid affection of these organs becomes highly interesting to the practitioner to consider, because of their frequent derangement in numerous disorders, and of the force of the fever I have detailed, being uniformly directed against them. In most dissections, the cavity of the abdomen was observed to contain an unusual quantity of serum, even where no dropsical complaint had existed; a transudation, it may be concluded,

cluded, that arose from the relaxation of the extremities of the exhalent arteries, and from the debility of the absorbent system. That this last order of vessels was much enfeebled in its action, was evident from the large collections of serum met with in various parts of the body, the dropsical state of several organs, and from the slow introduction of the colouring matter of the bile into the habit when the gall bladder was distended with bile, and no visible cause of obstruction to its passage into the duodenum existed. A pint, quart, or three pints of serum, commonly issued from the abdomen as soon as the integuments were divided, which was generally inodorous, except in subjects dead of dysentery. Now and then there was a deficiency of the fluid, which is necessary to give lubricity to the viscera, and when this was the case, I observed that the muscles too possessed great rigidity. Far then from there having been relaxation of the exhalent vessels here, a similar action must have prevailed in the arterial extremities as in the muscular fibre, drawing them into a state of constriction and rigidity, which remained after death. Or, probably the absorbent vessels of the part, from some secret cause, became preternaturally active, as death approached, and took up all the exhaled fluid that lubricates the viscera. A similar thing to this occurs in dysenteric affections. The absorbents of the intestinal canal, under particular circumstances, acquiring præternatural activity, remove the more fluid part of the secretions of the intestines, and leave only a tenacious mucus, which favors the formation of scybala, and the irritative action of the bowel that increases the dysenteric affection.

The adipose substance of the omentum was generally absorbed, but if any remained, it was of a greenish or blackish colour. Sometimes the membrane merely remained, exhibiting the appearance of a web of the most delicate kind, spread out upon the intestines, or coiled up underneath the colon. For the most part, the omentum was contracted, and lay shrivelled up, half wasted, upon the intestine I have just named. Sometimes it has been drawn to the left side, and tucked under the small intestines; but frequently there were only a few rugged vestiges of such a part having ever existed. I have seen the whole membrane loaded with fat, and of a deep red colour, or raised into irregular red lumps, representing by their arrangement, figures of different descriptions. It very often adhered firmly to the peritoneal covering of the small intestines, when it was of a deep red colour.

The peritoneum frequently partook of disease. The inside of the duplicature, which lines the abdominal muscles, was often

often in particular parts, covered with layers of coagulable lymph, and interspersed with numerous red spots. The duplicature which lines the ribs, and passes under the diaphragm, was in this case of a deep red colour, and had several lumps of coagulable lymph detached from each other upon it. That portion of the membrane which is reflected upon the viscera, was sometimes of a beautiful red colour, cloathing the organs underneath it, with a kind of red mantle. I have repeatedly observed it to be of a bright red colour upon the small intestines, of a deep red on the stomach, and of a light red upon the liver, at the same time. Drops of a whitish mucus have been found in different places, on the peritoneal covering of the viscera. Sometimes lumps of coagulable lymph adhered to it; nay, very frequently layers of coagulable lymph converted into a crust, have united the small to the large intestines, the intestines to the stomach, the left lobe of the liver to the spleen, this organ to the ribs, and occasioned such extensive adhesions of one viscus to another, and sometimes of the whole together, as to confine and materially limit their motions. These appearances of the peritoneum were by no means constant, like those I shall hereafter speak of. They did not necessarily follow intermittent as some others, yet they were by no means uncommon. They were combined, for the most part, with dysentery, abscesses of the spleen, and enlargements of the mesenteric glands, or some other great organic disease. In all the subjects in which I beheld these appearances, there was extreme emaciation, little or no fluid in the cavity of the abdomen, and the omentum was much wasted, so that the viscera enveloped, as it were, in a delicate deep red curtain, presented a truly beautiful sight. The ramifications of the blood-vessels were minute and numerous, and yet distinct on the omentum, when the adipose substance of this membrane was removed. This has occurred when the peritoneal covering of the viscera was of a deep red hue, so that a delicate web lay lightly spread over the whole, or was in some instances variously attached to the red curtain beneath it.

Bonitus mentions that he has seen the peritoneum covered with sanies, and degenerating into ulceration. It never fell to my lot to observe this membrane thus diseased.

The sufferings of patients, attacked with acute disease of the peritoneal covering of the viscera, were extremely severe. They experienced pungent pain over the whole abdomen, could scarcely bear the bed-clothes to touch them, frequently screamed out, had a hard frequent pulse, and lay upon their backs, with their body inclined forwards, and their knees bent.

Every

Every change of posture gave them extreme pain, and occasioned vomiting.

For the most part, the liver was enlarged, hard, and of a dark purple colour: but sometimes it has been found very soft and almost black. Hardness was not so much the consequence of intermittent on the liver, as increase of size, and change in colour. Though perfectly soft, this viscus has been enormously heavy and large, occasioning a great prominence in the right side, occupying the left even to the ribs, and extending nearly over the whole abdomen. Tubercles were found in the liver, but they were not of frequent occurrence. When sections were made into the lobes, black blood oozed freely from them, but seldom did any yellow fluid, or even lymph, trickle from the divided bile ducts, as is commonly observed in a healthy liver. The ducts were mostly free, and even somewhat enlarged. The liver was generally loaded with blood, and the portal system obstructed. In some instances, the liver has been of a gelatinous consistence. Portions of it, taken between the fingers, could be squeezed to a substance similar in appearance to grumous blood. I have known the liver have a variegated aspect, similar to marble. In this case it was generally smaller and harder than usual, but not of a schirrous nature. The lymphatic glands of this organ have been found obstructed, and in every case the portal system turgid with blood.

In some instances, yellowish glands, of the size of a chesnut, were met with in the lobes, around which ulceration had commenced.

The gall bladder was always distended with bile similar in colour and consistence to tar, separating frequently into two substances, one thin like serum, the other thick and tenacious similar to lumps of curd, only differing from it in point of colour. The bile in the earlier stages of the Walcheren intermittent was of a deep green, or deep brown colour, but less viscid than in protracted disease: I tasted the tar-like bile, but found that it had lost its bitter flavour, and that when mixed with water it did not impart yellowness to it, nor was it miscible without much agitation. Bile however of this description was not so offensive as bile of a deep green or brown colour, and that was less ropy. When acrid green bile has been found in abundance in the stomach and intestines, the gall bladder has generally been distended with the same kind of bile. There was a sharp, and almost caustic quality at times in this green bile, for the intestines have been often excoriated by it. I have repeatedly observed the villous coat of the gall bladder to be inflamed and ulcerated, nay, raised

into little tubercles such as those met with in dysentery. I have traced marks of excoriation in the ductus choledochus, duodenum, and stomach, all apparently occasioned by the acrimony of the bile; and I have seen gangrenous spots in the stomach and intestines where large quantities of green viscid bile have been rejected just before death. Morgagni has found the bile very acrid in all intermittent fevers, and in the yellow fever it is also capable of producing extensive excoriations and gangrenes. In some few instances the gall bladder was almost empty, not containing above a tea-spoonful of thick black bile. Sometimes the bile it contained was of the colour and viscidity of bird lime. Whenever this animal fluid lost its natural brown colour, and did not impart bitterness or yellowness to water, (which was almost always the case) it might be considered as greatly vitiated. The long detention of acrid bile in the gall bladder invariably thickened its coats, occasioned tubercles to form, and the whole inner surface of the bag to run into ulceration.

The consequences of the Walcheren intermittent were as evident and extensive in the spleen, as in any other organ, I may add, generally more so. After a frequent recurrence of the paroxysms of intermitting fever, the spleen mostly grew so large as to be felt beneath the ribs, and when the fever has been long protracted, it has become enormously large. I have known it weigh upwards of five pounds, but this was very rare. But it was by no means uncommon to find it weigh three pounds, four pounds, and four pounds and a half. Cleghorn has known it weigh from five to six pounds. Whenever it acquired this immense size, its whole consistence appeared to be changed. It was hard, but yet of that friable nature as to admit of being broken into pieces between the fingers. In this state it had no distant resemblance to a linseed cake, only it was of a darker colour. Sometimes it had more the appearance of coagulated blood enclosed in a bladder, though when this viscus had become very large, it partook of a more solid consistence. In general its peritoneal covering could be stripped off with the greatest ease, having scarcely any adhesion to the organ within it. The spleen was often converted into a large abscess. If it had sustained much inflammation, had become much enlarged, and had occasioned pain and pyrexia, abscess generally ensued. Sometimes indeed abscesses formed in this viscus without being preceded by pain: now and then, however, the patient experienced great tenderness and pain on pressure, had pyrexia, and complained of rigors. Abscesses of the spleen were very numerous, and either large or small. Sometimes a small abscess occupied the superior part of

the

the spleen, and at others the whole viscus was converted into pus; its covering serving merely as a bag to hold the contained fluid. Some abscesses burst at the inferior edge of the spleen upon the intestines, others opened near the vasa brevia, some at its upper and posterior edge, while others destroyed the structure of the pleura, communicated with the thorax, and even emptied their contents, in part, into it. During the inflammatory action of the spleen, extensive adhesions took place, attaching this organ firmly to the side, the diaphragm, the stomach, liver, and even the colon. The most extensive adhesions were generally next the diaphragm, to which it was often so firmly attached that it could not be separated without tearing away the peritoneal lining of that muscle. Where the spleen adhered to the stomach the patient was attacked with frequent vomitings, and experienced considerable pain across the epigastric region.

One of the most distressing occurrences was that in which the spleen adhered to the left lobe of the liver and to the stomach at the same time, the patient experiencing constant vomiting, hiccup, extreme pain at the stomach, cold sweats and delirium. I twice knew an abscess of the spleen perforate the pleura, and open into the thorax, which gave rise to symptoms similar to those of hydrothorax. In both cases, the pleura around the aperture of the abscess was much inflamed to the extent of several inches, and the thorax contained many ounces of pus. Enlargement of the spleen was never to be regarded as a hopeless affection, but it rarely happened that this organ alone partook of disease. For the most part the liver, pancreas, or intestines were diseased at the same time, and when the spleen had become enormously large, ulcerated, or had degenerated into an abscess, it was no uncommon thing for the whole peritoneal covering of the viscera to be inflamed, and the colon and rectum in a state of complete ulceration. But the spleen was subject to other affections besides mere enlargement or suppuration. When this organ has been but little increased above its natural size, I have known it to be interspersed with yellow glands of the size of a bean both on its surface and in its substance. Sometimes the whole organ has been closely beset with them. When they acquired the size I have mentioned, they were apt to ulcerate, and accordingly as many ulcerated specks as there were yellow bodies, were afterwards seen to occupy the surface and the substance of the spleen. Sometimes a rough or scabrous kind of ulcer has covered the whole viscus, but in general, ulceration was confined to spots, and its origin traced to the yellow glands, in which, or around their edges, this process usually commenced. Hence it will appear that ulceration was a process going on while the spleen was scarcely larger

than natural, and without even being preceded by pain or inflammation, as in that affection of it which ended in suppuration. Although the spleen was not larger than usual, in many instances, where this ulceration appeared, yet it had acquired unnatural hardness or softness. The ulcerated portions of this viscus could be easily pushed off with the finger and thumb, and resembled very accurately flesh undergoing dissolution. That part of the peritoneum reflected upon the ribs, which was in contact with the ulcers, was generally changed in colour. It was sometimes red, and at others of a purple hue. The peritoneal covering of the stomach next the vasa brevia was frequently much discoloured. In one or two instances, where the spleen was interspersed with small ulcers, it was even less than natural, and I have no doubt, but for the disease of other organs putting an end to life, would gradually have corroded and destroyed the whole organ. In a few patients who died of dropsy, the spleen was of a fine light blue colour, yet when it was cut into, was found to be soft, and interspersed with yellow glands. I have known a portion of the left lobe of the liver that was attached to the spleen, covered with a similar ulceration to that which occurred in this organ. Hence we find, that the consequences of intermittent on this viscus, consisted in enlargement, suppuration, a conversion of its substance into something bearing the resemblance of coagulated blood, inflammation, the formation of yellow glands, ulceration, and a wasting away of its substance. The progress of enlargement of the spleen was sometimes marked by pain, but often it occurred without any. Yet when this organ had acquired a considerable size, the side was always tender, and the habit cachectic. I have known great enlargements of the spleen disappear under a course of mercury and drastic purgatives. As I have before intimated, the consequences of intermittent were never confined to diseases of this organ. I had a patient whose abdomen was distended to an enormous size by the sole enlargement of the liver and spleen. It came out to a point at the navel, and measured nearly three yards round. There was no water in it, he had no fever, his appetite was perfect, and he slept well: still he had a paroxysm of ague every day. I mention these circumstances, in order to shew to what extent these organs have been sometimes enlarged, without producing constitutional derangement. I have omitted to mention in detailing the morbid affections of the spleen, that it was sometimes found with large protuberances, and corresponding depressions in its edges. I saw one spleen weighing three pounds that had four remarkable protuberances on the side next the ribs, having the appearance of so many lobes.

The

The pancreas was seldom so large as it is in its natural state; on the contrary, it was condensed and hard. In some instances it was almost of a schirrous texture. In all long standing cases, this viscus had degenerated into a small firm body, that resisted forcibly the passage of the sealpel. The duct was generally much contracted; and instead of possessing a uniform density, the pancreas had acquired a lobular texture. Once I saw the pancreas affected with rugged projections of a purple colour; and in many instances small red granulations of a looser texture than the gland itself appeared near the duct. In recent cases of the Walcheren intermittent this gland was generally found in its natural state, but when this fever had induced dysentery, and enlargement of the liver and spleen, and other ravages on the abdominal viscera, the pancreas was generally small, firm, and almost of a cartilaginous consistence. I know no symptom that was indicative of a diseased pancreas; digestion was imperfect from various causes, and, therefore, could not be attributed to a vitiation or suppression of the pancreatic fluid only.

The stomach had various appearances. Sometimes it resembled a bag of a grey, purple, red or white colour; sometimes it was interspersed with red, at others with gangrenous spots. I have seen it distended with gas, and as tense as an inflated bladder. I have met with it flaccid and completely empty. I have known it to be so enlarged and relaxed as to reach down to the navel, and to occupy almost the whole space, transversely from the epigastric to the umbilical region; at other times it was so contracted and small as to be mistaken for the colon, and has, in reality, not exceeded it in dimensions. The stomach occasionally adhered to circumjacent organs. It often adhered to the spleen, and now and then to the liver, and once I saw it firmly connected to the colon. In this case the patient was attacked with frequent vomiting; and the same symptom accompanied an adhesion of the stomach to the left lobe of the liver. The stomach frequently contained green viscid bile, and for the most part there issued from it when divided a stream of fetid gas. Blood was occasionally extravasated in the stomach, and its inner surface was sometimes red, and at others spotted with gangrenous specks. I cannot say whether these appearances were to be attributed to the acrimony of the bile, but certain it is that when they were present, the stomach contained several spoonfuls of acrid bile, similar to that the patient vomited. I believe gangrenous spots are very common in this organ, in the remitting and intermitting fevers of warm climates. They have frequently fallen under

under Lind's notice. Now and then the stomach had an hour-glass contraction, and sometimes it was drawn far to the right side. In the majority of cases, however, this organ offered no vestiges of disease, and even where all the abdominal viscera have presented morbid appearances, the stomach was natural. It did not prove to be the organ against which the Walcheren intermittent directed its most violent action, for it has been found perfectly sound in some of the very obstinate and complicated cases.

The next part to speak of is the intestinal canal. Here I must necessarily detail the appearances produced by dysentery. Before, however, the structure of the intestines had undergone any organic change from the long continuance of the fever, certain marks of vascular derangement sometimes were sufficiently conspicuous. Now and then the small intestines had acquired an enormous volume, and equalled the colon in dimensions, and sometimes they were small and contracted. They were various in their colour, being one while red, then of a dark purple or a light grey colour. Where they did not retain marks of inflammation, they were flaccid, of a pale blue colour, and closely surrounded with ramifications of the mesenteric vessels turgid with blood. I have known the small intestines to be of a black colour, and to emit a very offensive odour. Sometimes their coats were much thicker than usual, and at others so thin and decayed as to tear between the finger, upon applying a very slight force. When they were firmer than natural, they were generally red on their inner surface, and their blood vessels as much distended as if wax had been injected into them. The valvulæ conniventes were particularly red; bile was often found in large quantities in the ileum and jegunum; sometimes a fluid as black nearly as ink, and occasionally extravasated blood. I have elsewhere said that the convolutions of these bowels were often united together by coagulable lymph. The great arch of the colon was often much distended with air, and as large as the stomach, while there were partial strictures in its descending part and sigmoid flexure. I have found strictures in its transverse arch before any dysenteric affection has come on, and seen the whole intestine so much contracted as not to exceed the ileum in dimensions. The transverse arch of the colon has been so much distended with gas as to efface the scrobiculus cordis by its pressure against it. The caput coli was often of the size of the stomach, and sometimes covered with red spots.

When the fever had entailed dysentery upon the constitution, the morbid appearances of the intestinal canal were

were far different from those I have described. In the first place the coats of the large intestines were preternaturally thick and hard. They were at times so firm and altered in their structure, so remarkably thickened that they had more resemblance to leather or ligamentous bands than to coats of the intestines. When they were cut into, they also appeared to possess different colours, being reddish near their inner surface, yellowish in the middle, and of a purple hue near their peritoneal covering. In consequence of the thickening, the diameter of the intestine was materially diminished, though not uniformly so in every part of it. The colon, from the caput coli to the termination of its sigmoid flexure in the rectum, was frequently thickened in an irregular manner throughout its whole length. The rectum generally had a similar appearance; on the inside of both these intestines there were red stripes which extended lengthwise or formed circles. Sometimes the villous coat was of a deep red colour throughout, at other times merely striped with red marks. Small red eminences or granulations appeared in clusters or singly in various parts of the bowels. These little projections or tubercles passed insensibly from a red colour, to a yellow, brown or purple hue, all which shades were sometimes visible in the same group. It was common for these tubercles to surround the intestine, and to appear upon the red stripes I have mentioned. While these little bodies were observed in various stages of their progress in different parts of the colon and rectum, ulcers having the appearance of small chancres, were distinguished in others. The groups of tubercles were often interspersed with small scabrous ulcers, which in fact seemed to be tubercles in a state of ulceration. I have sometimes seen the greater part of the colon and all the rectum covered with tubercles and scabrous ulcers, so as to give an ulcerated appearance to the whole inner surface of these bowels. The intestines were generally lined with purulent fluid, when this was the case, and were sometimes of a purple colour throughout their entire extent. To be more particular, here and there on the inflamed spots of the intestine, there were small eminences of the size of a pin's head or eminences of the magnitude of a grain of wheat, cut in halves, rougher at their apex, than their sides and bases; or small round bodies with an ulcer at their point, or little ragged ulcers excavated in the middle, resembling chancres; or one large, or a succession of small ulcers spreading wide upon and deep into the coats of the intestine. The colour of these tubercles were various. and their consistence firm. While their points were yellow, their

their edges were hard, and their bases almost black like a lump of decayed flesh. They did not come fairly to suppuration, but appeared gradually to crumble away, and to degenerate into a scabrous ulcer, much as if they had been undermined by a caterpillar. These bodies had their origin underneath the villous coat of the intestine, which in the early stages was merely inflamed and rough, next thickened, and at last ulcerated, at least, in those spots where tubercles were placed in clusters, so as to give the whole diseased part the appearance of a spreading ulcer. These ulcers always occasioned a contraction of the gut, which was mostly inflamed around them, and in advanced stages of the disease, gangrenous. I have frequently observed the intestine to be inflamed in several spots without having tubercles, but I could not detect tubercles where there was no inflammation. The first state of the intestine was combined with diarrhœa which preceded dysentery; the tuberculated state was only present in the latter disease. I should have observed, while speaking of the morbid appearances of the coats of the intestines, that they were sometimes confined to certain parts of it, that for the space of three or four inches the intestine would be nearly closed, and in other spaces so much dilated as to resemble distinct bags. The colon and the rectum were the intestines that were commonly found the most diseased in dysenteric affections, occasioned, I presume, by those efforts which are propagated along the intestinal canal to force it to expel its contents, being principally felt in the large intestines. The ravages of dysentery were not however confined to the colon and rectum. The ileum and jegunum were frequently interspersed with tubercles, inflamed, and ulcerated in different parts, having appearances exactly similar, in short, to those perceived in the colon and rectum. Dissections then shew us that dysentery of the chronic kind that occurred at Ipswich, consisted in inflamed spots of a passive nature (when diarrhœa rather than dysentery prevailed) with stricture of the intestines, a thickened state of the tunica propria and villous coat of the colon and rectum with, or without tubercles; a tuberculated state of the bowels, a state of ulceration which at first resembled small chancres, and then spread into a continued ulcer, destroying more or less of the villous coat, and lastly in a state of gangrene in which the intestines could be torn with facility, became black, and distended with offensive gas. I have repeatedly observed a thin sanious discharge ooze from between the ulcers I have described, excoriating the intervening spaces, and often, I have noticed grumous blood on the ulcerated part of the intestine, which has adhered firmly to it, or been by coagulable.

coagulable lymph united to sound parts of the bowel, giving the whole a dark purple hue, so that the intestine has been promiscuously interspersed with red and black spots, tubercles, and ulcers in the various stages of their progress. Such was the state of the intestine, in the worst cases, just before death, when a dark, sanious, and fetid fluid escaped involuntarily from the rectum and excoriated all the circumjacent parts. Any portion of the colon or rectum that was cut out and examined, had its coats infinitely thicker than natural, independent of the additional lining given to it by the groups of tubercles that were distributed upon its inner surface. The coats were firm, and differently shaded, and altogether changed in their structure. Such were the appearances in chronic dysentery in the colon and rectum. The latter intestine bore the greatest marks of disease, and was often in a gangrenous state, when the colon was only ulcerated. The cæcum was rarely the seat of dysentery, yet tubercles were once or twice detected in it. The inside of the cæcum was frequently found to be black, and the appendix cæci was generally discoloured. Indeed I have seen the whole intestinal canal retain marks of dysenteric disease. I have found tubercles interspersed in it from the jejunum to the rectum, partial contractions, and ulcers in various parts of it. I do not remember to have seen the villous coat of the ileum much altered in structure, but it has been found to be abraded, very red, and lined with small ulcers, I have at times observed a fluid of a reddish colour ooze freely from the inner surface of the ileum and jejunum, in which cases these intestines were very red and their coats thicker than natural. Sir John Pringle does not notice in his dissections of persons dead of dysentery that the tubercular and ulcerated appearances of the large intestines were sometimes to be seen in the ileum and jejunum. He observes, in allusion to a subject who died of dysentery, the dissector having cleared away the blood and mucus from the inside of the cæcum and colon, and of the upper part of the rectum, made us take notice of certain protuberances of a lighter colour than that of the rest of the surface. They were of a roundish figure, nearly equal in their height (which was about the twelfth part of an inch,) but of an unequal breadth. We all agreed that we had never seen any thing so nearly resemble the small pox, of a flat sort, at the height of the disease. These eruptions stood as thick on this tract of the intestine as variolous pustules, when numerous, do upon the skin, but differed from them in this, that as far as we examined them, they were of a firm consistence without any cavity. Sir John further adds, "I can well suppose that these tubercles might have been seen in other subjects

if I had more narrowly inspected them, for I am the more inclined to this opinion from finding in two authors, some hints to the same purpose. Not a word however does he mention of this diseased appearance being observable in the small intestines. Cleghorn too, after making some observations on the state of the large intestines, remarks, that he has seen schirrhous tubercles straightening the cavity of the colon, in several places, but he does not mention that the same appearances were observable in the jejunum and ileum. Dr. Hunter, in his observations on the diseases of Jamaica, speaks only of their appearing in the large intestines, comparing them, after they had made some progress, to a small eating ulcer, in which the prominence of the edges gives an appearance of a loss of substance, or as if the villous coat were entirely removed. Dysentery however produces baneful consequences over the whole intestinal canal, as I have had abundant opportunities of witnessing. In whatever part of this canal debility and irritation prevail, there we may expect to find the seat of dysentery.

I am now to notice the appearances of the mesentery and the kidneys, after which we shall examine the morbid state of the vascular system. In old standing cases of intermittent, the glands of the mesentery were swelled to the size of a nut, and were hard, and sometimes ulcerated. I have seen eight or ten glands enlarged in one body, but generally there were not more than three or four that had acquired a conspicuous magnitude. The mesenteric glands were not primarily affected in this fever, but they became enlarged when the intestines were ulcerated, and where the other abdominal viscera had sustained great disease. The mesenteric vessels were generally turgid with blood to their minutest ramifications, in the early stages of intermittent. Here, venous plethora always existed, as I shall hereafter more particularly dwell upon. With respect to the kidneys, they were generally larger than usual, but pale and flaccid, and their pelvis much dilated. The ureters were sometimes also much relaxed. I have known one kidney to be half wasted, while the other had acquired twice its usual size. Small stones and gravel have been frequently found in their pelvis in the course of the dissections, but whether they were to be attributed to recent disease or not, I really am not able to determine. In one subject I picked out of the pelvis of one kidney fifteen stones of the size of peas. All with the exception of one that had entered the ureter, stuck firmly to the sides of the pelvis. This was no doubt to be referred to former disease, but it is extraordinary that the patient, who was under my care, never once complained of lumbar pain, difficulty in making water, pain in the groin, or in short of any

symptom

symptom that announced the presence of calculi in the kidneys. There was seldom any vestige of disease in the bladder, yet nothing was more common than for patients to make bloody water, and to be seized with great pain at the neck of this viscus, strangury, and suppression of urine.

I have elsewhere hinted, that the vena portarum was always loaded with blood, even to its minutest ramifications, and I may now add, that a similar plethora of the whole venous system of the abdomen always prevailed at whatever period of the Walcheren intermittent the patient expired. The vessels of the mesentery in particular were conspicuously turgid. The ramifications which surround the intestines sometimes equalled a goose-quill in diameter, and have even been full of blood, to the very trunks of the mesenteric veins. In short, the whole venous system of the intestines was evidently surcharged with blood. The spleen as well as the liver partook of venous congestion, and that portion of the vena cava, which lies upon the vertebræ of the loins, and extends to the diaphragm was generally distended with black blood half coagulated, so that not only the veins returning blood from the viscera were in a state of plethora, but even their common trunk up to the right auricle of the heart. The higher the vena cava proceeded, the more remarkable was its dilatation. Near the heart it was enlarged a third of its diameter, was thinner than usual, and always loaded with blood. Several evident changes could also be traced in the heart. The right side of this organ, like the venous system, from its minute ramifications, in the abdominal viscera, to the extremity of the vena cava, was considerably dilated. The dilatation was particularly remarkable in the right auricle, which was always thinner, paler, and at least one-third larger than natural. It was generally flaccid, like the ventricle of the same side, and full of black blood that was coagulated, but of a firm consistence. The right ventricle too, owing to the difficult passage of the blood through the lungs, was mostly distended with blood of a firm consistence, the fibrous part of which adhered with great tenacity to the sides of the ventricle and to the valvulæ semilunares. The right side of the heart was always very pale, and the left firm and of a darker colour than natural. The former was not as, *à priori*, might be supposed from the increase of resistance opposed to it from the impediment to the freedom of the pulmonary circulation, thickened or inflamed. The effect of the resistance was a gradual diminution of muscular power, a dilatation of the fibres, in short, debility of the right

right side of the heart. I endeavoured by cutting off a dilated auricle, and sewing up its ventricular orifice, and the inferior vena cava, to ascertain the quantity of water it would hold, leaving the superior vena cava open for the purpose of introducing the fluid. I was able to pour into the auricle two ounces and six drachms of water: into some other auricles, I could only introduce two ounces and two drachms. I am aware of the imperfection of this method of ascertaining the extent of the dilatation the auricle had experienced, as it is necessary to know the increase of dimensions that is occasioned by the mere relaxation of the fibres after death, a computation by no means easy to make. There are other causes also that contribute to make the measurement difficult. The left auricle and ventricle mostly contained coagulated blood of a thinner consistence than that which was in the right side of the heart. It was often black even in those cases where no disease of the lungs existed. The coronary vein of the heart was in every instance distended with blood. The weight of the heart, was often greater than natural, and on account of its being flaccid, was always more elongated. No disease was less frequent in the sick at Ipswich, than carditis, and no appearance so rare as marks of inflammatory action. The uniform consequence of venous plethora, was debility of the heart, and not inflammation. In a few instances, indeed, coagulable lymph was found upon the heart, uniting it to the pericardium. I do not mean to say that the heart never presented marks of inflammation, only that it was a rare occurrence. This organ occasionally had a yellow suffusion: nay, its internal structure has been of a yellow hue, as well as its surface. In these cases, the aortic and pulmonary arteries had a bright golden tint, but the yellowness was very remarkable in the columnæ carneæ, and the tendinous extremities which terminate in the valves of each ventricle; all the valves also partook of the same colour. I have sometimes observed upon the surface of the heart small delicate hair-like vessels, distended with fluid, similar in appearance to lymphatics, but whether they really were vessels of this description I do not know. In two subjects the heart was found to be small and very hard.

The pericardium almost always contained more water than usual. The common quantity was from eight to fourteen ounces. The pericardium now and then adhered to the heart, and was inflamed on its inner surface. Condensed coagulable lymph has been found upon it. The pulmonary veins like the venous system of the greater circulation partook of the general plethora, and frequently contained blood of a black and coagulated

coagulated description. The arterial system of the lungs, as indeed of the whole body, was for the most part empty; the aorta alone contained a little blood. I shall continue to describe the state of the vascular system of other parts, and then return to the chest, in order to point out the other morbid appearances which were met with in it. The sinuses of the head were generally full of blood, well enough evidenced indeed before death in the turgescence of the jugular veins. For the most part the vessels of each duplicature of the pia mater were distended with blood. In one case there was an extravasation of blood between the dura and pia mater. I may now add that the superior vena cava partook of the universal venous plethora, by which we find that one of the most remarkable consequences of the Walcheren intermittent was plethora of the veins, apparently the result of a certain torpor of the heart and arteries, which became unable to keep up a regular and uniform circulation of the blood.

The pleura had frequently extensive adhesions to the lungs, particularly the upper part of it, connected to the vertebræ of the back. The adhesions indeed were numerous, and not confined to the side or back of the thorax. Sometimes the portion reflected over the diaphragm adhered firmly to the inferior part of the lobes, and more commonly on the left than the right side, owing to the spleen pushing up the pleura against the lungs, and creating inflammation in them. I have known the lungs of the left side of the chest pinned so firmly to the pleura, both behind and at the side that expansion and contraction of the pulmonary organ were totally impossible. I have known the lungs so firmly united to the diaphragm and to the ribs, that no force short of that which would destroy their structure could separate them; sometimes between the lungs and pleura a substance resembling another membrane has been observed. In a few instances it has appeared to be a mere crust formed by coagulable lymph and in others it has resembled an organic part, and has had vessels in it filled with blood. The cavity of the thorax seemed small in many subjects from the liver and the spleen, by their enlargement, having pushed up the diaphragm; in others the chest was half empty owing to the condensed state of the lungs, while in some other instances it was quite full, partly from its diminished capacity, and in part from the anasarcous state of the lungs, and the quantity of fluid effused. The lungs offered the following appearances: a condensation of their substance with a change of colour to purple, or a dark grey, without inflammation: a condensation of their substance with ecchymosis: a condensation with inflammation: an anasarcous state of their cellular substance: a state approaching

approaching to suppuration, wherein the lungs were of a dark red colour, soft, and verging in parts to a kind of purulent dissolution. In the first of these appearances, the lungs were smaller than natural and harder, yet upon being cut into, water issued from them freely, and the vessels were found to be turgid with black blood. In the second affection, the lungs were always redder than in health throughout their entire substance. When divided with the scalpel, blood oozed in abundance from numerous parts of the lungs, which always seemed to be extremely vascular. They were heavier than natural, and closely interspersed with small red spots. In the third affection, the consistence of the lungs was firm, and in appearance resembled liver. If they were washed repeatedly, and freed from the blood and serous fluid which filled up their cellular interstices, yet they preserved a deep red colour, and a similar density. I have known the whole right side of the lungs to be thus rendered impervious to the air, so that respiration has only been performed by the opposite half of this viscus. In the anasarcous state of the lungs, the bronchial glands were frequently enlarged, and water oozed freely from every part of the lungs, when divided by the knife. The anasarcous lungs were either of a deep grey, purple, or reddish colour, and appeared to be condensed in one part, while they were spongy in another. A pint and a half of a frothy serum has been squeezed from this organ when in an anasarcous state; there always appeared to be much serum in it, even where this disease was not well established, a cupful or several spoonfuls of an aerated fluid flowing from it even in cases of slight ecchymosis.

Effusion into the bronchiæ was one of the common appearances met with in the dissections. It was for the most part combined with some of the preceding affections, and when of a bloody description, was always accompanied with an inflamed state of the whole, or the greater portion of the lungs. In the condensed and inflamed lung, of the colour and consistence of liver, there was sometimes, an intermediate state of this organ met with between suppuration and inflammation. In other words, the substance of the lungs had become soft, was intermixed with a turbid fluid, neither resembling pus nor blood, and had degenerated into a decayed and corrupted mass, but did not emit any bad odour. Indeed, they had the appearance of dissolved flesh where this process had commened. Perhaps I should be more correct in considering this change gangrenous rather than suppurative. However, I thought the gangrenous character seemed better evidenced in the lungs, which were interspersed with black spots.

and

and which were darker than those I have described. Sometimes the lungs variously affected with these diseases swam in a pint and a half of serum, more or less turbid, bloody, or of a purulent quality. It was rare not to find water in the chest when the lungs were so much diseased as I have just described. I saw the left lobes of the lungs, once swim in pus that had been poured into the chest from an abscess of the spleen which had perforated the diaphragm and pleura.

I have seen tubercles in the lungs, but they were by no means a common appearance.

As I have particularized the morbid anatomy of this organ in the dissections I have elsewhere detailed, I shall not spend any more time upon it here.

In only three or four cases had the larynx become the seat of disease. This part was generally full of a frothy fluid when the lungs were anasarcous, or when effusion had occurred to a great extent in the ramifications of the bronchiæ. The thyroid gland has been found suppurated, fistulous ulcers opening under the arytenoid cartilages into the superior part of the larynx.* Sometimes the larynx has had a membranous lining to it, and at others a tumour has been formed in consequence of effusion, around the epiglottis, by the elevation of the cuticle, so large indeed as to equal a turkey's egg, and to completely close the passage into the glottis.

The vestiges of disease in the head, consisted in a turgescence of the vessels of the pia mater, in effusions of serum between the meninges, and in the presence of layers of coagulable lymph, condensed, preserving the consistence of jelly, of a turbid appearance, and attached to the upper surface of the pia mater. The ventricles were frequently filled with serum, and the plexus choroides was now and then raised into small red lumps resembling granulations of flesh. The substance of the encephalon was almost invariably softer than usual. Indeed it would hardly bear the knife without falling into a soft pulpy matter. The general soft and watery state of the brain, and the frequent detection of water between its meninges and in the ventricles are I think proofs of the impeded return of the blood to the heart from this organ, a fact as I have before hinted, confirmed in the plenitude of the sinuses and the jugular veins. I have known so much coagulable lymph thrown out upon the pia mater, as for the hemispheres to be completely united by it, and the whole brain to be covered, as it were, with a cap of semitransparent jelly. The coagulable lymph was

* A case of this kind occurred to Dr. Monteath, the particulars of which I am not acquainted with.

generally

generally found upon the posterior part of the hemispheres. After all, however, the most remarkable morbid appearance in the brain was its conversion into a soft gelatinous substance occasioned, I presume, by a redundance of water in that organ.

Such in a general view were the appearances entailed by the fever of Walcheren in the different cavities and viscera of the body. There are many curious and interesting cases of morbid anatomy in which extraordinary marks of disease were detected. These are given under the head of particular dissections. In this division of the work, I have brought together all the morbid appearances commonly met with in the progress of this disease for the convenience and better information of the reader, who will at once learn the ravages that were committed on the whole or the parts of the body by the Walcheren fever.

FINIS.

W. Flint, Printer Old Bailey, London.